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INSIDE DOPE

by GEORGE F. TAUBENECK

Story of the Week
Black Government
Cutting Off Your Nose
To Spite Your Face
The Burden of Leadership
Take Care of YOURSELF

Story of the Week

Gary, Indiana, women recently made things pretty hot for gamblers and "vice" overlords in that city. They picketed all the questionable establishments they could locate until they succeeded in closing them. The pickets got awfully hot, too, in this midsummer crusade.

One proprietor of a pool room put a large sign in his front window: "Dangér. It's hot and humid outdoors. Watch your health. Come inside and enjoy our air conditioning."

The pickets did, and his place was exonerated.

Chalk up another victory for air conditioning!

Black Government

(Concluded from August 8 Issue)

"A power over a man's subsistence amounts to a power over his will," wrote Alexander Hamilton, in the Federalist Papers.

And he was so right. When peoples who've lost confidence in their own abilities to feed themselves turn to Government for subsistence, they resign all rights to manhood. They are retrogressing to primeval forms of existence.

Primitive tribes—the Hottentots, the Australian aborigines, the African pygmies, etc.—don't have to worry about making a living. They all survive under their kings, and they manage to eat irregularly . . . but how well do they get along? Would YOU trade places with them?

Inmates of jails and penitentiaries are fed and housed, too. They never worry about where their next meals are coming from . . . nor where they'll be tomorrow!

The naked and thin coolies of China and India have "security," after a fashion, also. Their miserable lives and maggot-infested rice bowls are the result of adherence to the "security" fallacy—the nonsensical notion that "government is all of us" and "rulers can do no wrong." They simply resign themselves to a fatalistic poverty while the hereditary ruling oligarchy fattens to the point of obscenity.

The longer an oligarchy remains in power, the more corrupt it becomes. Dictators, kings, and rajahs are royalized originally because they promise to "share the wealth, and divide the riches." This they do, at first. But Government spending is like a magnet: the more payrollees it acquires, the more it must acquire to maintain its hold on the electorate and to keep objectors in line. Parasites of oligarchy breed rapidly. All fatten off the taxpayer like germites, and dessicate his stability.

Furthermore, oligarchies invariably reward faithful henchmen with all sorts of undeserved juicy economic plums. (During Rome's decline, political toadies were given sinecures, a percentage on tax collections.)

Free markets are undermined by Black Markets in consequence.

And when Black Markets are instigated by Black Government (through the subsidization of loyal henchmen) established businesses are forced to the wall by fly-by-nighters. The latter, who have had no training in the intricacies of the business they have been set up in by Black Government, and who have no long-term

(Concluded on Page 11, Column 1)

CRMA Members Report Fixture Sales Improving

See Little Possibility of
Major Price Changes in
Commercial Refrigerators

CHICAGO—Members of Commercial Refrigerator Manufacturers Association, attending the organization's annual meeting here on Aug. 4 and 5, revealed that substantially increased demand for industry products in the last four months had brought total volume to within 12% of the 1948 record figure, after a shrinkage of nearly 20% for the first quarter of 1949. Several manufacturers reported sales in excess of last year.

Profits are diminishing, it was brought out in the discussions, due to the lessened volume and continued high materials and production costs. There has been only a nominal change in the level of prices paid for raw materials used by the industry, it was stated.

However, barring a serious economic upset later this year, the profit position of the industry is expected

(Concluded on Page 21, Column 1)

Plans Set on Ajax \$895 Ice Maker

CHICAGO—The "Ajax Electric Iceman" automatic ice cube maker for commercial applications, which is being manufactured by Servel, Inc., and marketed by Ajax Corp. of America here, is now being field tested through pilot models placed at selected points, with production for commercial distribution scheduled to begin in November.

The machine is designed to make 156 cubes every 30 minutes, or about 360 lbs. every 24 hours. Tentative selling price is \$895.

Distribution of the Electric Iceman will be through exclusive distributors appointed by Ajax Corp. in the principal cities. It is understood that all of the distributors will also handle the Ajax line of room air conditioners.

Promotion on the machine will stress its compactness (it will fit under a bar), and the fact that it produces "crystal clear" cubes, the machine using fresh water for each batch of cubes frozen, drawing just the amount of water needed on each freezing cycle, and being self-cleaning.

To be supplied as accessory items with the Electric Iceman are an electric ice crusher, and a water softener.

Restaurateur Declares 'Air Conditioning Is One of Best Methods of Increasing Volume'

CHICAGO—Air conditioning "is one of the best methods of increasing volume that we have," a Fort Worth, Tex. restaurant operator told fellow operators at a recent "short course" sponsored by the National Restaurant Association.

Speaking from his own experience, C. W. Horan, owner of the Colonial Cafeteria in Fort Worth, reported, "During May and June of this year, our food sales were \$9,966 greater than in 1948, an additional increase of \$163 per day, making our food sales run \$368 per day greater than before air conditioning was installed. "This is my experience during a time when almost every other restaurant in our vicinity is reporting a loss of volume."

Horan told this story:

Meter Sales Plan Promoters Report They Are Reaching New Income Class

CHICAGO—Revival of the meter plan for selling household appliances has resulted in "sensational" sales of refrigerators during July, according to International Register Co., manufacturer of a coin meter device.

To substantiate this claim, A. M. Kinney, vice president, cited the following reported results:

A dealer in Rockford, Ill., who had previously been averaging less than one refrigerator sale a day, made 40 sales the first day he announced the meter plan. Twenty-five per cent were closed over the telephone.

In South Bend, Ind., an advertisement inserted in a local newspaper, which appeared on the street at 5 p.m., brought the merchant 38 telephone inquiries and 22 actual sales by closing time. The company sold 254 refrigerators the first week the plan was in effect; 50% of them sold for \$300 or more and were contracted for at two quarters a day.

Two thousand refrigerators were sold in a 10-day period by General Furniture Co. of Chicago after running full-page advertisements in two local newspapers, announcing that such appliances could be bought on the meter plan.

Union-Fern, an organization operating 10 stores in upper New York, sold 277 units the first day.

Schweger Bros. of Buffalo made 100 sales upon introducing the plan and have consistently averaged 25 to 30 units a day since that time.

To determine the source of this "phenomenal" amount of new business, International Register conducted a survey of 100 dealers who, together, reportedly sold more than 25,000 refrigerators on the plan during July.

This survey is said to have re-

vealed that "over 50% of the home refrigerators sold under the meter payment plan are being bought by low-income families who have never owned an electric refrigerator before and have been using an ice box."

The company pointed out that meter selling is neither new nor confined to the sale of domestic refrigerators.

The plan was developed originally by International Register, it is claimed, to combat the widespread slump in refrigerator sales during the "critical and difficult" period which began in 1930.

"Since its conception, nevertheless, all major household appliances . . . have been sold on the plan," the company declared. "Hair-driers for beauty shops, soft drink coolers, commercial refrigeration, direct-draw beer equipment, laundry and pressing machinery, and neon signs have also been sold to shop owners in this manner."

"At present, television sets are being sold on meter payment, usually on the basis of one quarter for each hour of entertainment."

The system, the company says, "is as simple and natural as dropping a coin into the family piggy-bank." And that's the way the manufacturer likes to think of the meter, since "it doesn't measure anything except time."

Put a quarter in the meter, and the product will operate for 24 hours. Two quarters permit 48 hours of operation.

If desired, a meter gear can be changed so the machine will take half-dollars. Should smaller coins be accidentally inserted they will fall harmlessly to the bottom of the re-

(Concluded on Page 4, Column 5)

Richmond Makes Cooling Users Get Water Permit

RICHMOND, Va.—Effective Aug. 15, plumbers installing air conditioning or refrigeration equipment that uses water must get permits from the Department of Public Utilities before connecting the equipment to the city water system, H. E. Lordley, assistant director of public utilities, has announced.

"The step is being taken because the department has received an increasing number of complaints from customers where air conditioning equipment has been installed on inadequate water services," Lordley explained.

"An average air conditioning unit may use 12 to 15 g.p.m., which the existing service connection may not be able to supply," he continued.

"The owner then applies to the utilities department for a larger water service connection, but finds himself at the bottom of a long list

(Concluded on Back Page, Column 5)

Westinghouse Adds Appliance Employees

MANSFIELD, Ohio—Plants of the Westinghouse Electric Appliance Div. here and at Springfield, Mass. will soon add approximately 850 employees to meet increased production schedules, reports J. H. Ashbaugh, vice president.

At the Mansfield plant about 550 employees will return to their jobs on Monday, Aug. 22. The majority of the recalled employees will man the second shift of the household refrigerator line. Others will be called back because of increased production in small appliances such as the electric griddle, pop-up toaster, waffle bakers, and sandwich grilles, Ashbaugh said.

At the Springfield plant where electric water cooler and refrigerator compressor production is being stepped up, approximately 300 employees will be called back to work within the next two weeks.

Factory inventories of household

(Concluded on Back Page, Column 3)

Carolina June Sales Up On All But One Appliance

RALEIGH, N. C.—Every major appliance except automatic clothes washers moved in greater volume during June in the territory served by the Carolina Power & Light Co. than for the same month last year, the utility reported recently.

Refrigerator sales were far ahead of last year, with 4,232 units sold this year as compared with 1,807 sold last year.

Ranges moved up from 1,014 units to 1,135, freezers from 209 to 270, water heaters from 841 to 854, dishwashers from 26 to 31, conventional washers from 1,508 to 1,852, driers from 5 to 7, and ironers from 50 to 54.

Automatic washer sales slipped from 296 to 257.

Household Unit Sales Set Mark For 6 Months

8-Cu. Ft. Size Big
Gainer; June Export
Sales Were Better

NEW YORK CITY—A record smashing 2,115,534 household refrigerators were sold during the first six months of 1949 by 12-13 firms reporting to the National Electrical Manufacturers Association, figures released by the association revealed recently.

The total bested the 2,016,523 units sold during the first half of 1948 by nearly 100,000 units.

Domestic sales this year were 2,038,815 as compared with 1,913,408 in the first half of 1948.

Foreign sales, contrary to the overall and domestic trend, fell off sharply from last year. This year's total was 76,719 units, of which five were sold in Canada. Last year, 103,115 were sold abroad, 773 of them in Canada.

June world sales of 12 firms numbered only 310,780 units, down 20% from the 389,973 sold in the same month last year. They were 9% under the 341,933 sold in May.

Foreign sales for June did not follow the sharp drop felt in the domestic market, being off only 13% from June, 1948 and better by 30% than in May. The increase from May was due to larger volumes in the 6 to 8-cu. ft. sizes.

The increased sales for the six months were brought about by larger volumes on almost all size refrigerators, particularly in those of 8-cu.

(Concluded on Page 4, Column 4)

PX Stores Limited to \$15 Appliance Items

WASHINGTON, D. C.—Effective Oct. 1, electrical appliances priced higher than \$15 wholesale, will not be purchased by military stores for resale.

This is one of the provisions of an agreement reached between a House Armed Services subcommittee and the armed forces. Previously, the Army and Air Force stores were not permitted to buy electrical appliances which retailed for more than \$50, while the Navy had no limit on prices.

Military stores must get rid of unauthorized stocks by Jan. 1.

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Wholesale Statistics:

June Refrigeration Parts, Equipment Sales Up 14%

WASHINGTON, D. C.—Based on reports from 23 firms, June sales of refrigeration equipment and parts wholesalers increased 14% from May but were 8% under June a year ago, according to the Bureau of the Census.

Sales of appliance and specialty wholesalers in June rose 5% above the May level but fell 5% below the June, 1948, volume, reports to the bureau from 74 companies showed. Equipment wholesalers' sales in June totaled \$1,190,000, while those of appliance distributors amounted to \$8,254,000.

For the first six months of 1949, sales of reporting equipment wholesalers declined 10% from the first 1948 half and those of appliance wholesalers 8%.

Compared with June of last year, there was no change in the inventories held by the 17 equipment wholesalers reporting this data at the end of June, but stocks were up 1% from May. Dollar value of the inventories was \$1,844,000.

According to figures supplied by 54 appliance wholesalers, their end-of-month inventories—valued at \$9,388,000, increased 3% compared with June a year ago and dropped 7% compared with May.

Commenting on reports from 3,083 wholesale houses in various lines of trade, the bureau said "cumulative sales for the first six months of 1949 dropped 7% below the sales level

established for the corresponding period a year ago, reflecting the 8, 3, 7, 12, 5, and 8% year-to-year declines reported for each of the six months from January through June, respectively.

"Wholesalers' sales for the month of June advanced slightly (1%) over

the previous month but decreased 8% below the sales volume recorded in the same month a year ago. . . Inventories for June 30 (valued at cost) are 4% in excess of the dollar value of stocks on hand a year ago but 5% lower than reported at the end of the previous month."

JUNE 1949 SALES COMPARED WITH OTHER PERIODS

Kind of Business and Geographic Division	Per Cent Change			June 1949 Sample No. of Firms Reporting	June 1949 Sample Reported Dollar Sales (add 000)
	June 1949 from June 1948	June 1949 from May 1949	6 Mos. 1949 from 1948		
Refrigeration equipment, parts (coml.)	-8	+14	-10	23	1,190
Middle Atlantic	-3	+13	-7	6	321
Pacific	-13	+2	-18	5	181
Appliances and specialties wholesalers	-5	+5	-8	74	8,254
Middle Atlantic	-26	+4	+2	12	685
East North Central	+3	+5	-1	16	1,914
West North Central	+2	-1	-8	9	385
South Atlantic	+8	+1	-8	13	1,991
Mountain	-20	+4	-27	5	683
Pacific	-22	+14	-12	8	873

INVENTORY, END-OF-MONTH (AT COST)

Kind of Business and Geographic Division	Per Cent Change			June 1949 Sample No. of Firms Reporting	June 1949 Sample Reported Dollar Values (add 000)
	June 1949 from June 1948	June 1949 from May 1949	6 Mos. 1949 from 1948		
Refrigeration equipment, parts (coml.)	0	+1	17	17	1,844
Middle Atlantic	*	*	*	*	*
Pacific	*	*	*	*	*
Appliances and specialties wholesalers	+3	-7	54	54	9,388
Middle Atlantic	-27	-13	7	7	722
East North Central	+5	-6	9	9	1,193
West North Central	+4	+3	7	7	790
South Atlantic	+23	-10	11	11	1,890
Mountain	+5	-22	5	5	949
Pacific	+12	+10	6	6	1,362

*Insufficient data to show separately.

Los Angeles Groups Plan Library, Shop, And Laboratory as Jesse Blair Memorial

LOS ANGELES—The Blair Memorial Foundation has been formed here under the sponsorship of a number of local refrigeration and air conditioning groups, with the idea of developing a memorial to the late Jesse C. Blair a laboratory, practical instruction shop, and library in the Wiggins Trade Technical Institute.

Jesse C. Blair, who died in 1948, was coordinator of the Apprenticeship Training for the refrigeration and air conditioning industry in Los Angeles City schools, and who was much revered as the man who devoted a number of years to training young men in the art and science of refrigeration and air conditioning. He taught for many years at the Wiggins Trade Technical Institute, which is the trade school connected with the Los Angeles City school system.

The original idea of the foundation was proposed by Arthur Hess, Los Angeles refrigeration engineer.

The foundation will be a non-profit corporation and is to be governed by representatives from the various societies and associations who have indicated their support of the foundation, these including: The American Society of Refrigerating Engineers

(Los Angeles section); The American Society of Heating & Ventilating Engineers (Los Angeles chapter); Refrigeration Manufacturers Association of Southern California; Refrigeration Contractors Association Inc. of Los Angeles; National Association of Practical Refrigerating Engineers (California Chapter No. 2); California Association of Refrigeration Service Engineers Society; Western Refrigeration Wholesalers Association; and refrigeration labor organization.

Plans for the activities of the foundation are being made by an over-all committee consisting of one representative of each organization, with a number of sub-committees as follows: finance, design and layout, library, construction, publicity.

The foundation has been promised the complete cooperation of the Los Angeles City schools district, which has assigned Harry L. Bowe, who replaced Blair as Apprenticeship Coordinator, as contact man to the foundation.

One of the letters sent out discussing the foundation and its projects reflects the thinking of the sponsors. It says:

"The laboratory we propose is not to be an accumulation of junk from back yards and from broken down plants, but a real, well-planned laboratory with modern equipment for the instruction and training of the refrigeration men for the benefit of our industry.

"We think the benefit from such a laboratory will be many times the cost and effort and money required to construct it. We also plan some form of annual student award to encourage study and maximum absorption of refrigeration knowledge. "A project such as this, properly executed, costs money and raising it will be our major job. But we will also require gifts of machinery, equipment and labor, plus books for a refrigeration library included as a part of this project."

NLRB Again Refuses To Enter Case Involving Small Local Business

WASHINGTON, D. C.—The National Labor Relations Board recently ruled that it would not assert jurisdiction over the operations of a cafe in Oakland, Calif.

The unanimous decision was in keeping with earlier actions this year in which the board declined to intervene in labor disputes involving small, local businesses.

One of the cafe's two bartenders had filed a charge that a bartender's union had discriminatorily caused his discharge.

In dismissing the complaint, the board noted that the cafe sold \$23,496 worth of alcoholic beverages over a seven-month period prior to the hearing, and that its income from a pin-ball machine and a juke box amounted to \$390 and \$600, respectively.

"The employer's principal purchases during this period consisted of beer, liquor, wine, and mixes," the board said. "All these items were purchased from local wholesalers."

"All the wines and mixes purchased by the employer were produced and bottled in California. The beer and liquor purchased . . . amounted to \$8,237, of which \$3,877, or 47%, represented beer and liquor produced and bottled outside California."

McCray 'Invades' Anchorage, Alaska

ANCHORAGE, Alaska—The most northerly situated McCray installation is claimed to be located in the H & D Supermarket here operated by Phil DeBrow.

George Herbert installed 50 ft. of McCray self-service equipment in the store, according to the manufacturer. Included are a 10, 12, two 8, and two 6-ft. cases for produce, meats, and dairy products. The store flew in \$156,000 worth of fresh foods last year, it was said.

Admiral Announces 120-Day Television Price Protection

CHICAGO—The first 120-day price protection plan in the television industry was announced recently by Admiral Corp.

The plan, effective Aug. 1, states that refunds will be paid distributors if recommended list, suggested dealer, and distributor prices are reduced, and to dealers if recommended list and dealers prices are reduced.

These refunds will equal the difference between the prices actually paid and the reduced prices on current radio and TV models in inventory and shipped between July 1 and Nov. 30.

"This price protection plan," states W. C. Johnson, Admiral's vice president in charge of sales, "is offered television distributors and dealers now as a solid contribution to stability within the industry."

Sales Engineer Wanted

High type Sales Engineer with an engineering background and real sales ability to call on high class accounts, must have experience in sales and ability to train men to sell condensing units and refrigeration equipment. Send full particulars, age, photograph, and references with application.

Box 3256, Air Conditioning & Refrigeration News

E-Z-SEE LIQUID INDICATORS

Now available in three end connections; male flare, female X male flare, and O.D. Sweat . . . in sizes 1/4", 3/8", 1/2". The 100% answer to the industry's demand for a foolproof, safe, liquid indicator. Positively leak-proof and . . . E-Z to see through.

Literature and Prices on Request.

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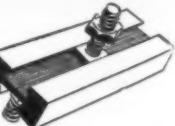
*The gauge with the Recalibrator

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SERVICEMEN SEE YOUR JOBBER

Motor Adapter Corporation
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DETROIT 4, MICHIGAN

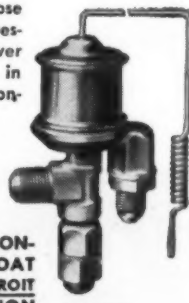
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DETROIT CERTIFIED VALVES and CONTROLS

designed right
built right
proven right

When you install DETROIT Certified Valves and Controls you are providing your customers with the best in refrigeration equipment. DETROIT Certified Valves and Controls are designed and built to fit your customer's needs—giving real economy and reliability through years of trouble-free service. This is true of the entire DETROIT line, one of the most complete in the refrigeration field. Add to this the fact that DETROIT has been famous for quality for over 70 years and you

have an unbeatable combination. But DETROIT goes even further, certifying every valve and control in its line—backing you, your work and your reputation. For helpful information on ordering and installing DETROIT Certified Valves and Controls, send for the colorful DETROIT Catalog No. 200-B today.

No. 573 Thermostatic Expansion Valve—Designed for small commercial installations. Double diaphragm construction makes close superheat control possible at low suction pressures. The two-diaphragm gas charged power element provides motor overload protection in its simplest, most effective form. 1/2 ton, Freon-12. Write for Catalog No. 200-B.



No. 573

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Blees Names Factors Tending To Maintain Current Price Levels

DALLAS, Tex.—Three factors will tend to keep present appliance prices firm, W. A. Blees, vice president and general manager of the Crosley Div., Avco Mfg. Corp., declared in a speech here recently.

They are the facts that labor will not accept less than it is getting now, that industry has cut costs almost as much as possible, and that the costs of basic materials is moving upward again.

Blees added that as a result of the continued firmness of prices, he expects buyers who have been on a "strike" for the past several months to get back in the market this fall.

He said that Crosley is getting on a double-shift basis in its refrigerator plants as fast as possible to replenish dealer inventories that are very low.

Over-all sales of the division are about 20 to 25% ahead of last year in both unit and dollar volume, he declared.

Johnson Service Trains Student Engineers

MILWAUKEE—A special training program for recent U. S. and Canadian graduates in mechanical engineering is being conducted by Johnson Service Co. here, manufacturer, engineer, and contractor for automatic temperature and air conditioning control systems.

The intensive six-week course, which ends in August, is being held at Johnson's headquarters. In addition to classroom discussions and demonstrations, it includes laboratory work and field trips to current Johnson projects as well as to installations already in operation.

Upon completion of their training, the graduates will be assigned as sales engineers to Johnson Service Co. direct branch offices. Canadian men will be assigned to Johnson Temperature Regulating Co. of Canada, Ltd.

Participating in the training program as the company's guest is Chin Fun Kwok of Shanghai, China, who is spending a year studying manufacturing plants in this country before returning to China.

Reserve Board's Move Opens Up Credit Lines

WASHINGTON, D. C.—A financial maneuver to make bank credit more readily available to both business and government was recently made by the Federal Reserve Board.

The board cut reserve requirements of country, reserve city, and central reserve city banks by 2% on demand deposits and 1% on time deposits. The cut is said to be \$1,800,000,000.

All of the reserve requirement reductions become effective Sept. 1.

The *Wall St. Journal* commented that this move will have only a psychological effect on business as there is plenty of money available for loans anyway. However, it is expected to encourage bank purchases of government securities at the moment when the government is embarking on a deficit financing program.

Seeger To Produce for Added Admiral Output

CHICAGO—Admiral Corp. announced recently the completion of negotiations with the Seeger Refrigerator Co., St. Paul, to produce refrigerator cabinets for the Admiral line.

L. H. D. Baker, vice president in charge of refrigeration, stated that Seeger would produce approximately 50% of the Admiral refrigerator cabinets with American Central Div. of Avco Corp. of Connorsville, Ind., retaining the other 50%. The addition of the new supplier, as announced by Baker, is "due to the rapid growth of the refrigeration business which makes this expansion necessary."

Air Conditioning Installed To Aid Self-Serve Setup

ROCHESTER, N. Y.—Air conditioning and refrigeration have been brought into play in setting up a new self-service meat department in the remodeled Star Supermarket at Monroe Ave. and Winton Rd.

Refrigeration equipment has been installed in large storage rooms where meat is kept before processing. The processing room itself, where butchers prepare cuts for the self-service department, is air conditioned. And the self-service counters are refrigerated.

Rain Doesn't Stop Women Trying To Find 'Key' to Big Discount on Washer

EDGEWOOD, Pa.—Though the company's refrigeration service work is going at such speed the firm can't keep its two delivery trucks at the store, Glasser Refrigeration Service, 1119 South Braddock Ave. still has time for an appliance promotion.

Nothing was free and probably the women would rather have spent the money on their summer vacation, yet 25 of them enthusiastically came out-in-the-rain to try winning a new washer for only \$37.50.

Glasser offered the washer to the woman lucky enough to have the one among hundreds of keys that would unlock a padlock on the prize washer displayed in the store.

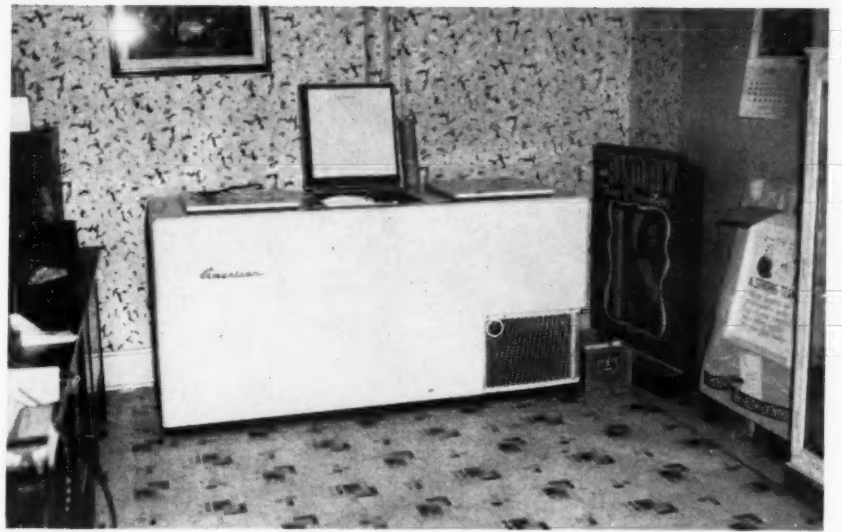
Cost nothing to try, and one woman saved \$87.50 on the deal. Most prospects in this white-collar neighborhood were middle-aged housewives, new faces, and very enthusiastic. They had picked up their keys in the store in advance.

Afternoon of the "unlocking" (2 p.m., Monday) two wanted refrigerators; one was a television prospect.

Sass Heads Hearn Dept.

NEW YORK CITY—Under a six-man divisional merchandise manager arrangement created recently by Hearn Department Stores, Inc., Max G. Sass will merchandise the major appliances and housewares departments, among others, according to Maurice M. Meltzer, president.

Pharmacy Attracts Doctors Who Hunt With Freezer for Them To Use



DENVER—An unusual service to physicians which has built much goodwill for Professional Pharmacy, Inc., here, is a 22-cu. ft. home freezer, reports D. Malcolm Carey, head of the firm.

The freezer, an American model, is located in Carey's general office, next to the pharmacy, which is one of Denver's largest prescription service drugstores.

While at first glance, the refrigerator appears to have some connection with biological drug storage, it is actually there entirely as a convenience for 800 or more doctors who have offices in surrounding build-

ings, according to Carey.

"I put in the big box when I found that most of the doctors in the area are ardent fishermen or hunters," Carey explained. "It gives them an ideal place close to their offices to sharp-freeze outstanding catches or bags."

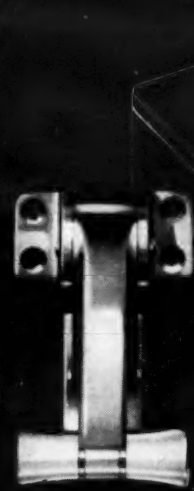
The druggist also uses the refrigerator to keep a stock of ice cream bars on hand for children of prescription patients, and an occasional customer.

"I have found that the home freezer is an efficient means of keeping doctors who are also sportsmen and fishermen thinking about us."

Field Tested...Durable...Easy to Apply

NATIONAL LOCK

Refrigerator Hardware



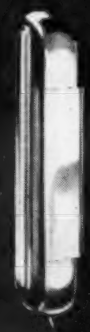
No. 59-224 LOCK
No. 59-225 STRIKE



No. 59-213 LOCK
No. 59-214 STRIKE



No. 59-215 HINGE



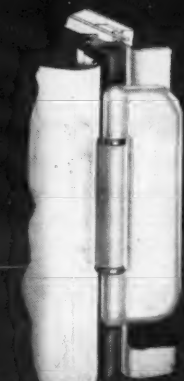
No. 59-229 HINGE



No. 59-8128 LOCK



No. 59-167A HANDLE ASSEMBLY

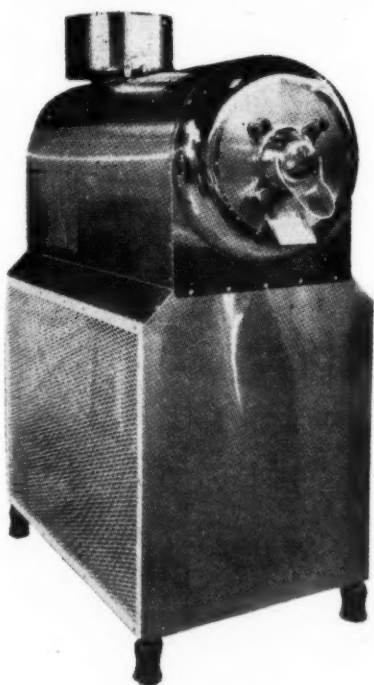


No. 59-241 HINGE

Write for Design Details on Surface, "Thru-The-Door" and "Edge-Mounted" Types

The NEW SILVER RIBBON

by Van Linden



The newest style continuous freezer for manufacturing Frozen Custard, Ice Cream and other novelty ice cream products.

DISTRIBUTORSHIPS AVAILABLE
some exclusive territories are still open

Designed for Maximum Efficiency: consistent overrun and finest texture of cream. Automatic temperature control. Spun stainless steel mix tank, round style for easy cleaning. Low operating cost. Ultra-modern design. Adjustable legs.

Engineered for Simplicity of Operations: new type sturdy dasher. Easily disassembled for cleaning. Self-contained mechanical features.

Constructed for Rugged Dependability: Silver Ribbon Model 175 Specifications—controlled output 5 to 15 gals. per hour; self-contained 1 H.P. water cooled compressor; heavy duty ¾ H.P. dasher motor; weight, 1040 lbs.; Width, 27 inches; Depth, 40 inches; Height 55 inches. (Other models in 25, 30, 50 gal. capacity or larger sized to order.)

VAN LINDEN, Inc.

1074 East Colorado St., Pasadena 1, California



NATIONAL LOCK COMPANY

ROCKFORD • ILLINOIS
REFRIGERATOR HARDWARE DIVISION

Another business producer from the Cunningham Line



CUNNINGHAM CABINETS

will get you business every day.

This wide open dairy products display cabinet maintains a perfect temperature. Has a capacity of 6 cases of milk on the lower shelf. Middle shelf is also refrigerated. Can be used for cream, butter, etc.

For Complete Information Write To

CUNNINGHAM PRODUCTS COMPANY

8790 GRINNELL
DETROIT 13, MICHIGAN

310,780 Household Refrigerators Sold In June by 12 Companies

(Lacquer and Porcelain Exterior Cabinets) (Advertised Sizes)
Complete Refrigerators Only

JUNE (12 Companies)				
Sizes	Domestic (48 States and D. C.)	Canadian	Other Foreign	Total
1. Less than 4 cu. ft....	.....	.....	.....	.....
2. 4 cu. ft.	4,435	.....	376	4,811
3. 5 cu. ft. ....	.....	.....	.....	.....
4. 6 cu. ft.	45,910	.....	4,605	50,515
5. 7 cu. ft.	82,338	.....	2,905	85,243
6. 8 cu. ft.	93,265	.....	4,737	98,002
7. 9 and 10 cu. ft.	63,548	.....	1,639	65,187
8. 11 and 12 cu. ft.	6,702	.....	319	7,021
9. 13 cu. ft. and up	1	.....	.....	1
10. Total	296,199	.....	14,581	310,780

FIRST SIX MONTHS (12-13 Companies)				
Sizes	Domestic (48 States and D. C.)	Canadian	Other Foreign	Total
1. Less than 4 cu. ft....	994	.....	.....	994
2. 4 cu. ft.	13,292	.....	964	14,256
3. 5 cu. ft. ....	.....	.....	.....	.....
4. 6 cu. ft.	234,292	.....	19,061	253,353
5. 7 cu. ft.	413,071	1	16,545	429,617
6. 8 cu. ft.	684,356	4	23,364	707,724
7. 9 and 10 cu. ft.	586,853	.....	13,933	600,786
8. 11 and 12 cu. ft.	105,922	.....	2,846	108,768
9. 13 cu. ft. and up	35	.....	1	36
10. Total	2,038,815	5	76,714	2,115,534

Participating companies: Admiral Corp.; AVCO Mfg. Corp.; The Coolerator Co.; Frigidaire Div., General Motors Corp.; General Electric Co.; Gibson Refrigerator Co.; Hotpoint, Inc.; International Harvester Co.; Kelvinator Div., Nash-Kelvinator Corp.; Norge Div., Borg-Warner Corp.; Sanitary Refrigerator Co.; Westinghouse Electric Corp.; Seeger Refrigerator Co. (out 1-1-49); Stoddard Mfg. Co. (out 5-1-49).

Meter Sales--

(Concluded from Page 1, Column 4)
ceptacle and can be returned to the owner by the collector or applied to the account.

The merchant's overhead cost of meters and of collecting on meter sales is estimated to be between 3% and 4% during the life of the contract—in other words, \$3 to \$4 for each \$100 worth of merchandise sold. This figure does not take into consideration re-use of the meter on subsequent contracts.

"While some dealers use delivery truck men to make collections from the meters, progressive dealers have their salesmen make the collections," International Register said. "This system has unlimited possibilities for selling additional merchandise."

"Inasmuch as the monthly call to collect is kept on a congenial basis, not only because the payment is always ready and prompt, but because the customer is presented with a receipt instead of a bill, the salesman can and will make additional sales right in the customer's home."

Surveys it conducted in 1941 of 15 public utility companies selling on the meter plan showed, the company said, that repossessions average less than 4%, "which was better than regular monthly payment accounts."

The company added that "there have been countless numbers of meter payment buyers who have become so imbued with the practicality of the basic principle of this plan that, when their contract has been completed, they have bought the meter attached to their refrigerator from the dealer, so as to continue to save money for other purposes."

A list of appliance outlets in various parts of the country that are using the meter plan has been prepared by International Register. Most of the firms listed are applying the plan to household refrigerators, but some are also employing it to sell home freezers, ranges, water heaters, washing machines, and other appliances, it was noted.

Searls, White-Rodgers Electric Co.; A. R. Benue, The Ebco Mfg. Co.; R. H. Israel (ex-officio), Virginia Smelting Co.

RSES educational conference and relations committee:

G. E. Graff (chairman), Ranco Inc.; F. G. Coggin (vice chairman), Detroit Lubricator Co.; Willis Stafford, Chicago Seal Co.; H. T. Jarvis, Refrigeration Engineering, Inc.; K. B. Thorndike (ex-officio), Detroit Lubricator Co.

Finance committee:

W. A. Siegfried (chairman), Superior Valve & Fittings Co.; R. H. Israel, Virginia Smelting Co.; W. J. Stelplug, Hussmann Refrigeration, Inc.; H. F. Hildreth, Westinghouse Electric Corp.; W. Vernon Brumbaugh, executive secretary, Rema; K. B. Thorndike (ex-officio), Detroit Lubricator Co.

Rema-ASA-B9 safety code committee:

L. C. Love (chairman), The Ebco Mfg. Co.; C. M. Brown, Tecumseh Products Co.; Cecil Boling, The Heat-X-Changer Co., Inc.; G. E. Graff, Ranco Inc.

Rema-RISAC committee:

L. W. Larsen (chairman), Tecumseh Products Co.; L. C. Love, The Ebco Mfg. Co.; C. M. Cordley, Cordley & Hayes; W. Vernon Brumbaugh (alternate), executive secretary, Rema.

Membership committee:

L. C. McKesson (chairman), Ansul Chemical Co.; H. C. Morrison, Curtis Mfg. Co.; P. L. Craft, Mueller Brass Co.; R. H. Israel (ex-officio), Virginia Smelting Co.

Nominating committee:

H. F. Hildreth (chairman), Westinghouse Electric Corp.; E. M. Flannery, The Bush Mfg. Co.; R. H. Luscombe, Penn Electric Switch Co.; K. B. Thorndike (ex-officio), Detroit Lubricator Co.

General standards committee:

A. B. Newton (chairman), Acme Industries, Inc.; D. D. Wile (vice chairman), Refrigeration Engineering, Inc.; D. E. Rutishauser, Hussmann Refrigeration, Inc.; L. W. Larsen, Tecumseh Products Co.; R. H. Tull, Westinghouse Electric Corp.; F. Y. Carter, Detroit Lubricator Co.; W. Vernon Brumbaugh, executive secretary, Rema.

General statistical committee:

E. G. Bower (chairman), Kelvinator Div., Nash-Kelvinator Corp.; J. A. Drake, Norge Div., Borg-Warner Corp.; E. G. South, Frigidaire Div., General Motors Corp.

June Sales--

(Concluded from Page 1, Column 5)
ft. capacity and larger. Only in the 7-cu. ft. size was the volume smaller than last year.

In 1948, the 646,892 7-cu. ft. refrigerators sold in the first six months led all other size categories. This year, however, the total dropped to 429,617, and was topped by the 8-cu. ft. size with 707,724 units sold and the 9 and 10-cu. ft. category with 600,786 units sold.

The drop in domestic and world sales for June was accounted for entirely in the larger size units. Refrigerators of from 4 to 7 cu. ft. scored larger sales during June than in May, while the 4 and 6-cu. ft. sizes did better than last year.

REMA Committee Appointments Made

WASHINGTON, D. C.—Following a recent meeting of the board of directors of the Refrigeration Equipment Manufacturers Association at the Black River Country club, Port Huron, Mich., the following committees were announced by K. B. Thorndike, president of Rema, for the period ending May 1, 1950:

REWA relations committee:

W. T. Carmody (chairman), Sporlan Valve Co.; Irving Wilson (vice chairman), Superior Valve & Fittings Co.; R. H. Israel (ex-officio), Virginia Smelting Co.; chairman of all product sections.

Credit committee:

E. T. Polsten (chairman), The Bush Mfg. Co.; B. F. Peterson (vice chairman), Automatic Products Co.; W. A. Siegfried (ex-officio), Superior Valve & Fittings Co.; credit managers of all member companies.

Export committee:

W. J. Stelplug (chairman), Hussmann Refrigeration, Inc.; F. R. Maggini (vice chairman), International General Electric Co.; R. H. Israel (ex-officio), Virginia Smelting Co.

Rema organization committee:

R. H. Israel (chairman), Virginia Smelting Co.; E. M. Flannery, The Bush Mfg. Co.; W. J. Stelplug, Hussmann Refrigeration, Inc.; W. A. Siegfried, Superior Valve & Fittings Co.; H. F. Spoehrer, Sporlan Valve Co.; K. B. Thorndike (ex-officio), Detroit Lubricator Co.

Public relations committee:

H. F. Hildreth (chairman), Westinghouse Electric Corp.; H. R. Roberts (vice chairman), Whiting Corp.; K. B. Thorndike (ex-officio), Detroit Lubricator Co.

Rema show committee:

H. F. Spoehrer (chairman), Sporlan Valve Co.; L. C. McKesson (vice chairman), Ansul Chemical Co.; J. K. Noel, Jr., Victor Products Corp.; J. F. Dailey, Typhoon Air Conditioning Co., Inc.; K. B. Thorndike (ex-officio), Detroit Lubricator Co.

Program committee:

H. Blake Thomas (chairman), McQuay, Inc.; John E. Dube, Alco Valve Co.; Jack

More and More... Engineers Agree
that It's not **HOW MUCH** moisture
you remove from a refrigeration system
that counts...

...It's **HOW LITTLE** moisture
is left!



That is why they install a
SPORLAN CATCH-ALL
when they really want to dry
a system.

They know that the Catch-All is the
Perfect Filter-Drier because it dries
down to a Low End Point... a point
So Low that any remaining
moisture is
absolutely harmless!

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SPORLAN

Catch-All

THE PERFECT FILTER-DRIER?

because

Its unique, porous cylinder is made up of minute particles of a highly efficient desiccant, whose efficiency is greater than that of the same desiccant in granular form.

because

After being completely assembled, it is activated to a high degree of dryness and immediately sealed with moisture proof seals to prevent any moisture from entering before installation.

because

It cannot powder!

because

It cannot pack!

because

The refrigerant cannot channel!

because

Being scientifically molded to provide progressive filtering it filters any foreign matter as minute as 9 microns with negligible pressure drop.

Having a molded, porous cylinder, the Catch-All is inherently free from powdering, packing, and channeling. Designed scientifically to give maximum contact of refrigerant and desiccant, the Catch-All is a perfect filter and a perfect drier.

When you want clean Bone-Dry refrigeration systems...
install Sporlan Catch-Alls and get Peak Performance on all installations

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THE CATCH-ALL IS OBTAINABLE AT ALL SPORLAN WHOLESALERS

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Larger Capacity Catch-Alls with Replaceable Cores and a New Small Size Catch-All for Domestic Refrigerators and Small Commercial Package Units.

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UNITS • PARTS • TOOLS • SUPPLIES

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Wesco Promotion Offers 35 Frozen Food Packages as Premium on Refrigerators

NEW YORK CITY—Up to 35 packages of frozen foods are offered without charge as a premium with the purchase of new Westinghouse refrigerators under a plan now in full swing all over the country, according to Westinghouse Electric Supply Co.

"The plan was first tested on the Pacific Coast, and proved such a salesmaker that it was immediately adopted by Westinghouse on a national basis," the company said, noting that the promotion was made possible through an arrangement with Birds-Eye-Snyder Div. of General Foods Corp.

The plan permits dealers to give away 35 packages of Birds-Eye frozen foods with the purchase of each "Deluxe 9" or "11" Westinghouse refrigerator and 21 packages with each "Super 9" model.

Refrigerator purchasers get two or more packages each of orange juice, peaches, French fries, green beans, wax beans, corn, mixed vegetables, peas, spinach and succotash.

It was explained that Wesco distributors set up the plan with the nearest Birds Eye distributor, who pays the major portion of the cost of the frozen foods. The Birds Eye distributors packages the assortment of foods, which is "promptly and automatically" delivered to the homes of refrigerator buyers.

Westinghouse is backing dealers in the plan with a variety of promotion material.

Freezer, Cooking School Brings 53 Appliance Sales

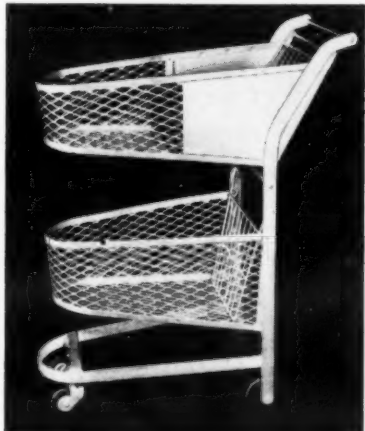
CENTRE HALL, Pa.—The first combination freezer and cooking school to be held in the Centre Hall Grange proved to be a profitable one for Jeffries Furniture Mart here, one of the sponsors.

Jeffries joined with the Woman's Club of Centre Hall to put on the event, advertising it over the radio and through the newspaper. The school drew 225 women despite a heavy rain.

The participants proved to be so interested in the freezer and cooking demonstrations put on by Philco and West Penn Power Co. home economists that Jeffries sold six ranges, four refrigerators, and two freezers that very day. He also got 16 prospects for electric water heaters.

In the days following the school he sold 18 ranges and 23 freezers and is still calling on prospects.

DEALERS WANTED Here's Easy Extra-Profit!



Sell these new TELESCOPE MARKET CARTS to your self-serve and supermarket customers—for full details contact the CAMPBELL-FRENCH COMPANY 13116 Fenkell Detroit 27, Michigan

Magnet for Children



Double Duty Case Doubles Candy Sales; Drugs Up, Too

CRETE, Neb.—A refrigerated case which does double duty as a candy vending fixture and storage compartment for biologicals such as the sulphur drugs and penicillin has doubled the sales volume of candy as well as considerably boosting receipts from the prescription department at the Plouzek-Pfisterer Drug Co. here, reports Joseph W. Plouzek.

The case was installed last year, and has proved to be a magnet to youngsters and adults alike.

Winter candy sales jumped immediately after the fixture was put in, while during the warm months the drugstore has been able to more than triple candy sales because a good stock of chocolate candies can be carried where heretofore lack of refrigerated display curtailed such trade.

A sloping compartment at the top with glass cover serves to display chocolate candy, while one of the two large compartments below is used for boxed chocolates. The other side holds biologicals for the prescription department and has enabled the drugstore to carry a much larger stock of such items than before, thereby building up prescription business steadily, Plouzek pointed out.

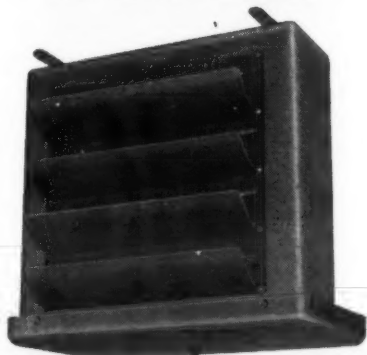
Cost of operating the unit with its self-contained refrigeration system has been surprisingly low, the druggist added, and the fixture has paid better dividends than any other in the drugstore.

Robinson Awarded \$55,920 Hospital Air Conditioning Job

LOS ANGELES—Hugh Robinson & Sons, air conditioning contractors here, has announced that it has been awarded a contract by the Los Angeles County Board of Supervisors to furnish and install air conditioning systems for seven surgery and four delivery rooms in the Acute Unit of the Los Angeles County General Hospital.

The contract amounted to \$55,920. A total of 130 calendar days was allowed for completion of the installation at an estimated cost of \$50,000.

LOOK to LARKIN for Good Looks



LARKIN HUMI-TEMP UNIT

For clean, smart lines, satin-smooth finish, color and overall good looks—Larkin leads. Behind this beauty is the quality and performance that keeps Larkin ahead.

Manufacturers of the original Cross-Fin Coil — Humi-Temp Units — Evaporative and Air Cooled Condensers — Air Conditioning Units and Coils — Direct Expansion Water Coolers — Steel Vacuum Plate Coils — Heat Exchangers.

WATCHDOG OF THE NATION'S FOOD SUPPLY

LARKIN COILS 519 MEMORIAL DR., S.E. • ATLANTA, GA.

Book Lists Refrigerated Meat Storage Periods

NEW YORK CITY—How long may uncooked meats be kept in a household refrigerator without losing top flavor?

According to a booklet issued recently by Swift & Co., the maximum periods at 36° to 38° F. are:

Hamburger (not frozen) and lamb hearts, two days; beef and veal liver (sliced), veal sweetbreads, pork loin chops, and sausage links in cellophane, three days; round beef steak, three to five days; frankfurters and table-ready meats (bologna, baked loaves, luncheon meats), four to six days.

Lamb and veal loin chops, five to six days; standing rib roast of beef, five to eight days; leg roast of lamb, sliced bacon, and ham halves, six to seven days; picnic hams, 10 days; sliced dried beef, 12 days; and dry sausage, two or three weeks.

Monitor Settlement Plan Hearing Set for Sept. 15

NEW YORK CITY—Hearing on a plan under which Monitor Equipment Corp. would effect a 100% settlement with creditors has been set for Sept. 15 in U. S. District Court before John E. Royce, referee.

The plan, which would be carried out under Chapter XI of the Bankruptcy Act, calls for 25% to be paid in three months and the remainder in monthly instalments of 10%.

Monitor listed liabilities of \$471,102 and assets of \$743,662.

'Sit Down and Have a Coke' Is Bango Greeting

NEW ORLEANS—Putting the customer in a receptive mood is the No. 1 asset in appliance merchandising, according to A. L. Bango, head of Bango-Salzer here.

Knowing the average Southerner's predilection for soft drinks, Bango achieves just that by keeping a refrigerator in the center of the showroom full of cold Coca Cola, one of which is popped out, opened and handed to each prospect with a flourish before any appliances are discussed. Similarly, there are comfortable lounges and chairs scattered through the appliance store, so that the prospect is never far from a comfortable spot to sit.

Relaxed, with a cigarette and Coca Cola, the prospect is much more willing to listen to sales talks, according to the New Orleans dealer. The difference in sales ratio per prospect entering the store has been outstanding, since Bango began giving away the Coca Cola.

Page Air Conditions Realty Co.

CHARLOTTE, N. C.—Jesse W. Page, Jr., president of Page Air Conditioning Co., Inc., has announced that his firm recently signed a contract to air condition the offices of the Carolina Realty Co., 112 East Fourth St.

"A special design has been worked out for these offices," Page explained. "Two Worthington packaged air conditioning units, one of 3-ton capacity and the other of 5-ton capacity, will be installed."

Railroad Deodorizes Air in New Passenger Cars

NEW YORK CITY—Air "quality," or freshness, is claimed to be high in the New Haven R.R.'s new passenger cars because all the recirculated air in the car passes through activated carbon air recovery panels which adsorb or soak up the odors it may have picked up from tobacco smoke, food, perfumes and cosmetics, or any other source.

To supplement the outside ventilation air the car designers installed air recovery panels to purify one half of the return air with the result that the total fresh air in the car is more than doubled and odors, often a source of travel fatigue, are said to be banished.

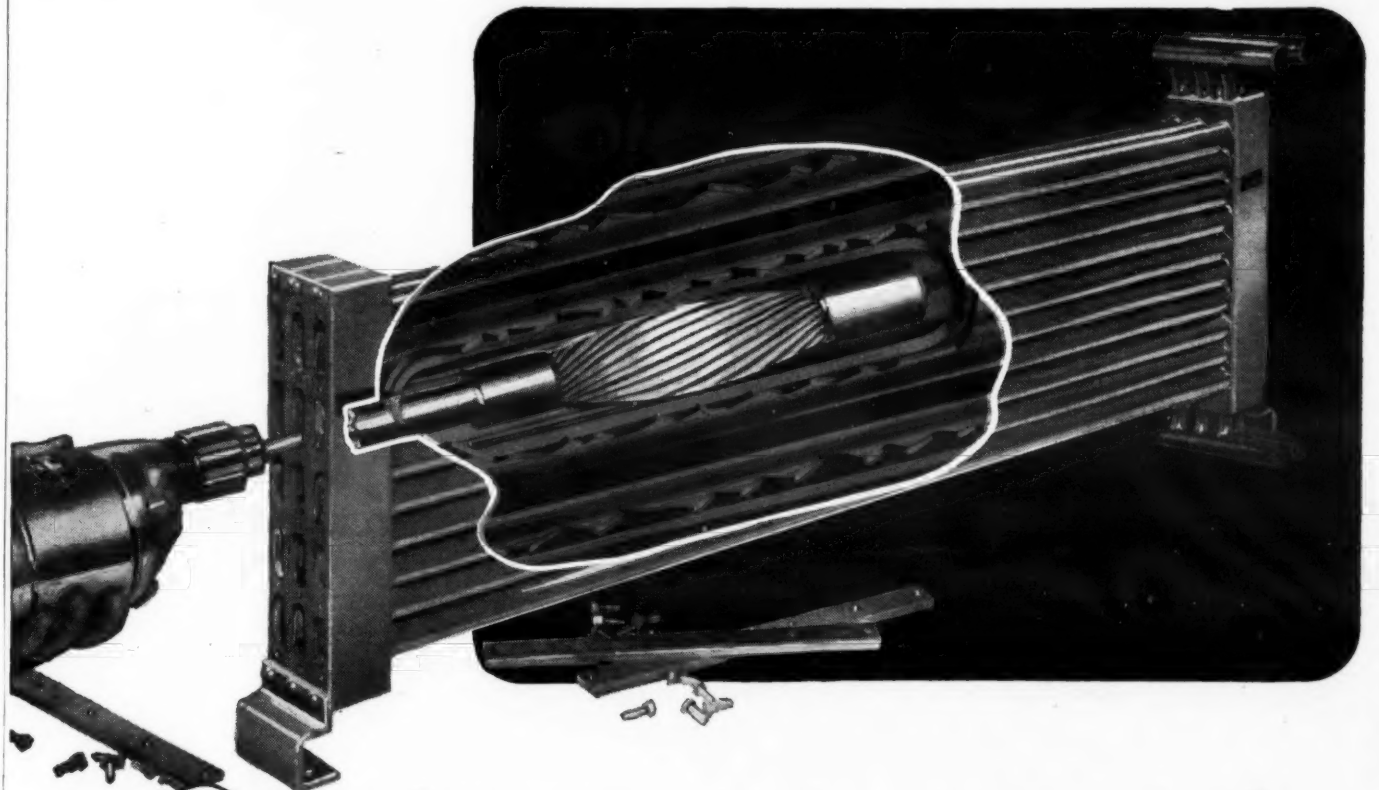
Cool Cotton Mill Spinning Room

JOANNA, S. C.—The Bahnsen Co., of Winston-Salem, N. C., has completed installation of air conditioning in one of the spinning rooms of the huge Joanna Cotton Mills plant here.

"The system installed in the spinning room is a 250 unit which conditions the air to supply 35,000 spinning spindles," mill officials stated. "The room now maintains a normal average temperature of 84° F. and a relative humidity of 60%."

"The company has washed air installations in the weaving, carding, and the other two spinning departments."

"Cost of the refrigeration installation was about \$106,000. Refrigeration air conditioning was put in the No. 1 spinning room because of the extremely low ceiling."



HM condensers more economical because they're cleanable!

Commercial users and service engineers the country over are now specifying Halstead & Mitchell condensers for replacement and conversion orders—to obtain the most economical operation with maximum efficiency.

These new HM units combine two qualities never before obtainable in tube-within-a-tube, water-cooled condensers—they're cleanable, and they achieve TRUE counterflow heat-exchange relationship between the coolant and the refrigerant, enabling water requirements to be reduced without sacrificing condenser unit capacity.

On your replacement or conversion requirements, specify HM condensers—any size from 1/2 to 10 H.P.

JOBBER in all principal cities carry HM condensers in stock for immediate delivery—standard sizes of 1/2 to 10 H.P. Write for jobber list and descriptive literature.



OFFICES: Bessemer Building, Pittsburgh 22, Pa.

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Catalog 1949

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Answer to Trade-In Problem: Recondition & Resell

Stucky Bros. Sets Up Well-Equipped Repair Shop, Separate Sales Room To Handle Used Appliances

FT. WAYNE, Ind.—With 60 to 80% of refrigerator and washer sales involving trade-ins, how to dispose of the latter poses a problem for the appliance dealer.

Reconditioning and resale of the used appliances is one answer to the problem that is being successfully employed by Stucky Bros., veteran dealership here.

"But I don't think we have all the answers," comments Ken Stucky modestly.

"Maybe we're doing it the right way, maybe not."

Ken's father was one of the three Stucky brothers who established the store way back in 1914.

"It was a general store then, and our line of appliances amounted to cook stoves and washers. Those were the days when the washers used on farms were operated by gasoline engines," he points out.

USED APPLIANCES UPSTAIRS

Today the firm operates two stores in the heart of town. One of these is of average size and serves as headquarters, but at the other location the firm has three floors of a large but not too modern building.

The first floor of this building is devoted to display and sales of new appliances. There is a separate entrance for the second floor where used refrigerators, washers, and other appliances are displayed. There

is also a certain number of new items on the floor here.

Repair and replacement parts are also stocked on the second floor where a number of over-the-counter sales on these items is made. In addition, small appliances and radios are repaired here.

CAN DO MAJOR REPAIRS

Major repairs to refrigerators, washers, etc., however, are handled in the third floor service department under the direction of "Whitie" Dettmer, service manager, who usually is found on the floor below showing used equipment to prospects, answering the phone on service calls, or working in the parts department.

The third-floor service department is equipped to recondition the used appliances traded in on new sales, when reconditioning is deemed advisable.

"Of all the refrigerators taken in on trade we probably resell more than half of them," says Stucky.

"Some of them are resold 'as is' when we figure it is more profitable to do it that way. Others, of course, are completely reconditioned before going onto the used merchandise display floor."

There is no set rule for determining just how the boxes are to be handled, he said. Each trade-in is examined and the decision made on an individual basis.

"Some of the trade-ins have to be

Checking a Trade-In

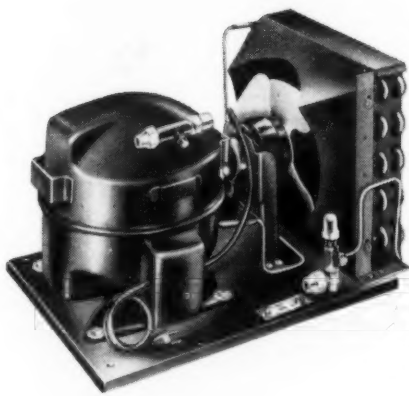
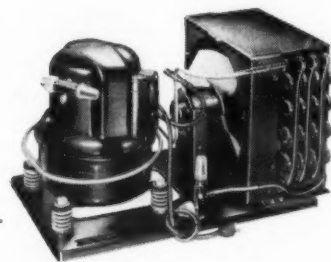
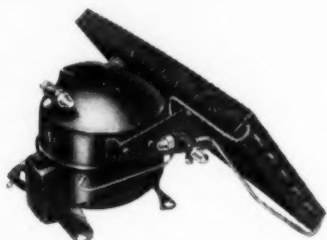
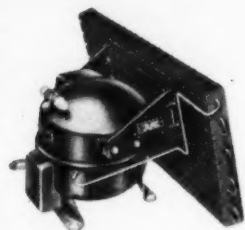


A large percentage of the trade-ins received by Stucky Bros.—and 60% to 80% of their sales now involve them—are reconditioned and resold. Checking the system on this box is Homer Selch.

Steaming Grime Off a Washer



Stucky Bros., household dealership in Ft. Wayne, Ind., finds this DeVilbiss spray booth very useful in spraying appliances and also, as Loren Troxel demonstrates, the best place to steam clean washers before reconditioning them.



GREAT

Favorites!

TECUMSEH HERMETIC UNITS

They're smooth, they're quiet, they're dependable; they give long-life performance at minimum cost. Over four million Tecumseh Hermetics are daily demonstrating these qualities—qualities which have made them Great Favorites with the public and the industry alike.

Here are a few outstanding features of Tecumseh Hermetics: Large, over-size bearings; counterweighted crankshafts; super finished bearing parts ($\pm .0001$ "); Chieftainized connecting rods and pistons; intake and discharge mufflers. These and many other features contribute to the superiority of Tecumseh Hermetics.

Basic models include both fan-cooled and static condenser type units. In various combinations of compressors, motors and condensers, they cover the entire range of applications from $\frac{1}{8}$ h.p. to $\frac{3}{4}$ h.p.

Write today for complete information.



TECUMSEH PRODUCTS COMPANY

Tecumseh, Michigan

EXPORT DEPARTMENT: 2111 WOODWARD AVE., DETROIT 1, MICHIGAN

World's largest
independent producer
of Compressors and
Condensing Units

junked, and we're probably junking more right now than we have in the past two years.

NO POINT IN SALVAGING PARTS

"When replacement parts and motors were hard to get during the immediate postwar period we tried to salvage as many of the parts and motors as possible. Farmers offered a good market for used motors, incidentally. Now that all these items are much easier to get, there's no point in our trying to salvage this stuff, so we usually junk it when it's not worth repairing."

In figuring allowances of old appliances the salesman usually handles this himself. If, however, he's in any doubt as to what should be offered, he has one of the men from the seven-man service department who can make a more accurate estimate come out and look at the machine, Stucky explained.

Two of the Stucky servicemen specialize on refrigerator service and repair, another two concentrate on washers. There is also a radio repairman in the crew. And between them all, the department also takes care of ranges, water heaters, etc.

DOUBLE USE FOR SPRAY BOOTH

Equipment in the shop is fairly complete. There's a drill press, for example, and a lathe. The latter is used chiefly for turning down motor armatures. Of special importance there is the paint spray booth.

This DeVilbiss booth equipped with a heavy-duty exhaust fan serves a dual purpose. Obviously, it's primary

(Concluded on next page)

FRIGIDAIRE
MADE IN U.S.A.

GOOD PROFIT QUICK SERVICE
ON
FRIGIDAIRE SEALED IN UNITS
YOU CAN NOW MAKE A PROFIT ON
YOUR FRIGIDAIRE SEALED UNITS.

NEW
FACTORY AUTHORIZED FRIGIDAIRE
CHICAGO ZONE REPAIR SHOP.

Dealer Price \$35.00 F.O.B. Shop. One
Year Guarantee—Not Including Fan,
Relays or Switches. Models from 1938
to present date only.

Ship Freight PREPAID to
**NORTH TOWN REFRIGERATION
CORPORATION**

4711 Lincoln Avenue Chicago 25, Ill.
Telephone: UPTown 8-1000 Dept. "C"

WILSON
REFRIGERATION, INC.

- FARM AND HOME FREEZERS
- REACH-IN REFRIGERATORS
- WALK-IN REFRIGERATORS
- FARM MILK COOLERS

DIVISION OF WILSON CABINET CO., INC.
SMYRNA • DELAWARE

Wall WIRE
PRODUCTS COMPANY
Manufactures of...

REFRIGERATOR SHELVES • STAMPINGS
FORMED AND WELDED PRODUCTS



When it comes to Refrigerator Shelves
...Think of WALL.

WALL WIRE PRODUCTS COMPANY Plymouth, Michigan

Another Used Refrigerator Sold



A. C. Peek (left) has just purchased a used refrigerator from Whitie Dettmer, head of Stucky Bros. service and parts department, who's writing up the bill of sale while Eldon Wood, radio repairman, and Ken Stucky (right) review a list of repair jobs.

Stucky Bros.--

(Concluded from preceding page)

use is for paint-spraying of appliances, but it also facilitates cleaning of appliances, particularly washers. The latter are cleaned with a steam jet that takes off the dirt, scum, and grease that are bound to accumulate on a washing machine. The steam, into which is mixed a detergent, is supplied by a Kerrick boiler.

The steam-cleaning equipment has been in use here about a year, and has proved very effective, according to Stucky.

Getting back to the over-all question of policy on servicing and disposing of trade-ins, Stucky pointed out the problem of deciding how much effort should be apportioned to these activities.

"Most manufacturers of appliances want their dealers to concentrate on the sales of new items, and that is only natural. But the dealer, looking at it from his own point of view, has to take care of these trade-ins some way, and ideally he wants to make a profit on them. At least," says Stucky, "he doesn't want to lose any money on the deal."

"We're shooting at trying to make a profit on this operation," and it seems that the firm is succeeding.

Showmanship:

Tommy Tucker Tucks It Into Freezer Promotion

ASBURY PARK, N. J.—A clever coffee-bean-guessing contest was used here recently by Tommy Tucker, former nationally known orchestra leader, who is now a G-E appliance retailer at Bangs & Cookman Ave. here, to bring in thousands of home appliance prospects.

Moving to the new location, Tucker offered a G-E home freezer to the housewife who correctly guessed the number of coffee beans displayed in a glass coffeemaker in the window of the store. Each customer was required to fill out a card listing her present home appliances and those in which she was currently interested.

The contest brought in over 1,000 names during the first month. In addition to awarding the prize, Tucker followed up each entry with a personal letter, expressing regret that not everybody could win, and inviting the prospect to come in for a look at major appliances in which they were interested. One paragraph gave a few details about the winner of the home freezer, which type of information Tucker believes should follow all giveaway contests.

Store Gives Refrigerators Pre-Delivery Checkup

YOUNGSTOWN, Ohio—Devoting special service attention to all new refrigerators before they are delivered to the customer's home, and regularly "polishing" displayed stock to eliminate cracks, stains, discoloration, and broken hardware, has had a lot to do with the success of Reichart's, Norge dealership here.

Reichart's makes a fetish of seeing that every refrigerator delivered from the company's showroom arrives at the home in perfect condition.

Responsible is a complete service department, equipped with paint-spray booth, rubbing compounds, variety of high-quality refrigerator paints, and a parts department.

Like many other dealerships, Reichart's has had to contend with appliances delivered by the railroad companies with the smooth finish cracked, scuffed, or otherwise damaged. Instead of putting in an immediate claim, and going through much bookkeeping, letter-writing, and long, drawn-out details to gain satisfaction, Reichart's simply routes the refrigerator into its own shop.

Here, any damaged finish is cleaned to the bare metal, reprimed with a blue-white base, which prevents the "amber look" which frequently follows improperly applied paint jobs. At the same time, any damaged hardware is replaced, bent panels straightened, etc.

In this way, the store has never found it necessary to take a markdown on any of its refrigerators, or to sell the usual "slightly damaged" box.

Centering Customer Attention



Hotpoint's new work center display background provides compact grouping of kitchen appliances for display in dealer's stores. Shown here in miniature are three typical arrangements all using same background with adjustable window. Dealers ordering cabinets and appliances for kitchen or home laundry work center get display background at no additional cost. Cooking and serving center, sink and dishwasher center, and storage and mixing center (above) can be put together for complete all-electric kitchen in dealer's store.

Vacuum Cleaner Sales Down

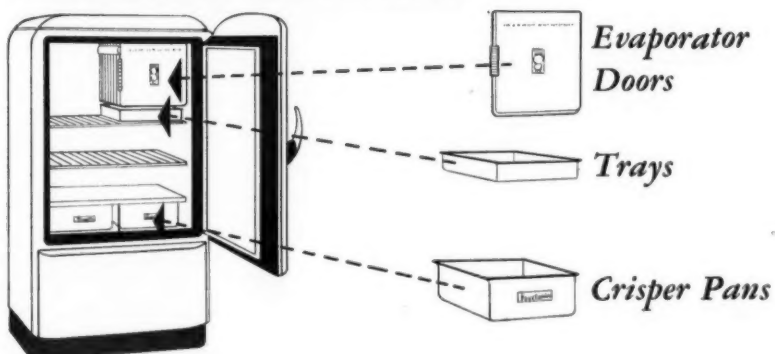
CLEVELAND—Factory sales of household vacuum cleaners for this year had already exceeded by the end of July the 1,670,129 units sold in the entire year of 1941, the Vacuum Cleaner Manufacturers Association reports.

Frigidaire Promotes Cline

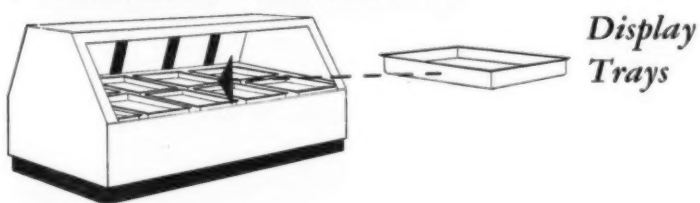
NEW YORK CITY—Promotion of H. M. Cline from eastern region appliance sales manager of Frigidaire to general sales manager of the New York branch of Frigidaire Sales Corp. has been announced. Cline succeeds F. M. Drake.

FOR Your PORCELAIN ENAMEL JOBS—A Specialist IS THE ANSWER

✓ HOUSEHOLD REFRIGERATORS



✓ COMMERCIAL REFRIGERATORS



✓ HOME AND FARM FREEZER ACCESSORIES

For over 20 years, The Strong Manufacturing Company has produced only top-quality porcelain enamel products—and are specialists in refrigerator accessories made to manufacturers' most exacting specifications.

You can depend on fast, efficient service, on-time deliveries, and quality geared to your production demands.

Send Us Your Specifications and Production Needs
or
Write for Complete Information

THE STRONG MANUFACTURING CO.
SEBRING, OHIO

you'll save

when you standardize on

because of:

- Immediate Availability on Many Types and Sizes.
- Improved Engineering Features that Assure Long Life and Efficient Operation.
- A Liberal Warranty.
- A Wide Variety of Types and Sizes.
- Nationwide Service Facilities with Replacement Motors and Parts—When You Need Them—Where You Need Them.



Repulsion Start Induction Motor 1/4 to 15 h. p.

Open-type, Polyphase Squirrel Cage Motor 1/4 to 400 h. p.

Explosion-Proof Motor 1/4 to 200 h. p.

Totally-enclosed, Fan-cooled Motor 1/4 to 200 h. p.

Regardless of what your motor requirements may be, Wagner can furnish a standard motor to fit your needs. Twenty-nine branch offices, located in principal cities, are ready to assist you whenever you have a motor problem. Write for Bulletin MU-185 for information on the complete line of Wagner Motors.

Wagner Electric Corporation
6441 PLYMOUTH AVE., ST. LOUIS 14, MO., U. S. A.

Consult Wagner Engineers on all Electric Motor Problems
ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES • AUTOMOTIVE BRAKE PRODUCTS

An Idea, a Scooter, and a 6-Hole Cabinet



AUSTIN, Minn.—A six-hole Schaefer ice cream cabinet mounted on a motor scooter is selling a remarkable volume of packaged ice cream and ice cream novelties for John Mills, a local ex-GI with an idea.

Mills conceived the idea that Austin housewives and children would welcome having ice cream brought right to their doors and that they would support a profitable summer business.

So last spring, he approached E. F. Shutt, manager of the Marigold Dairies here, and presented his idea. Shutt approved and arranged for him to get a Schaefer four-hole cabinet and put it on his motor scooter. Mills would sell Marigold ice creams on the streets.

Only slight alterations were required on the motor scooter to make the ice cream cabinet fit. Mills added a brilliant canopy, bought a small electric generator, added orange colored, insect repelling lights, put a jangling brass bell on the front, and started out.

He soon found that the four-hole cabinet was not big enough and so installed a six-hole cabinet. Mills said he runs the Schaefer cabinet down to temperature in the morning and, by using a reasonable amount of dry ice, his products keep perfectly throughout the day.

Mills works about two hours before lunch, eats, and then starts out again at about 1:30 p.m. and works the rest of the afternoon and evening.

8-Page Freezer Supplement Has Variety Of Appeals In Articles, Advertisements

COLORADO SPRINGS, Colo.—A special eight-page supplement devoted to the promotion of home freezers and home freezing was recently published by the Colorado Springs Gazette-Telegraph.

The supplement contained lengthy articles on the proper way to freeze fruits and vegetables and complete detailed instructions on the use of the home freezer as a valuable storage unit.

Sixteen local home freezer dealers and two frozen food distributors placed large advertisements in the supplement. Some also provided the newspaper with editorial copy and pictures on their stores or their freezer lines.

An outstanding front page feature was a two-column panel of five pictures illustrating the few steps required to prepare spinach for the freezer. Another picture feature on an inside page showed how to prepare strawberries for freezing.

Nine different brands of home freezers and the Frigidaire "Coldwall Imperial" refrigerator with separate freezer compartment were pictured throughout the supplement.

Top rated article on the front page informed readers that the "Home freezer is modern treasure chest. Frozen fruits and vegetables superior in nutritional value." It was signed by May Stanek, extension nutritionist at Colorado A & M college.

Miss Stanek pointed out that "in preparing food for freezing, cleanliness and attention to detail, particularly in handling the vegetables and

fruits, cannot be over-emphasized.

"Care must be taken to obtain proper varieties which are adaptable for freezing and to obtain or to gather them when they are at their prime."

She discusses freezing and storage temperatures, recommending at least -10° F. and air movement for freezing, and from -5° to 5° F. for storage. She emphasized the need for air-tight containers and briefly detailed the methods of packing fruits in syrup.

Longest article in the supplement, occupying 14 columns and space on three pages, was a detailed essay on "Preparing your own food for quick freeze and individual locker storage" by Janie D. Spencer of Pueblo, Colo.

Miss Spencer pointed out the main advantages of owning a home freezer and then launched into a thorough discussion of what to freeze, types of containers, equipment for the preparation of foods, how to freeze fruits, vegetables, poultry, fish, and dairy products, and management of the locker. She concluded her article with a table on blanching time for various vegetables at 4,500 to 5,000-ft. altitude, which is common in this area.

FRONT PAGE RECIPES

Smaller items scattered over the front page gave recipes for various frozen dishes, such as frozen raspberry minute tapioca, deviled chicken, and raspberry cobbler.

Articles on the inside told of the advantages of the different brands of freezers, told how the home freezing industry got started, and commented on the development of home freezer. One local merchant, Simon Halle, wrote a guide to the proper selection of a home freezer.

In individual advertisements, the dealers made these appeals:

Walter Ament's, Philco dealer at 10 E. Colorado Ave. emphasized the variety of Philco freezers available, giving the price and credit terms of each. He pointed out that "your grocer carries Snow Crop AA Grade (frozen foods) for your Philco freezer!"

Sears Roebuck & Co., 120 S. Tejon St., featured its 12.7-cu. ft. Coldspot freezer as "America's best freezer buy." It noted four situations in which meal planning and entertaining are made easy with a freezer.

These include the picnic lunch, quick lunch, formal dinners, and meals for unexpected guests.

Strang's Appliance Store at 208 N. Tejon St. pictured the 8-cu. ft. Frigidaire home freezer selling at \$299.75 and listed its features. On another page, the Peerless Furniture Co., 115 N. Tejon St., advertised the Frigidaire 8.4-cu. ft. freezer at \$329.75.

Hatch & Co., 10 S. Tejon St., declared that "all good cooks know that your best buy in home freezers is a new Crosley Frostmaster." This store offered a free home demonstration. It displayed prominently the

price of \$149 with terms at \$2.50 per week.

American Furniture Co. of Denver, 106 N. Tejon St., announced that it features General Electric home freezers and presented the NA-8 at \$319. The George Doty Co., 432 S. Tejon St., featured the same model, inviting the public to "come in tomorrow to see it—and own it." This firm pointed out that the freezer "provides you with your own store . . . never closed."

Halle's, 119 N. Nevada St., also displayed the General Electric brand, but stressed that it carried the complete range of sizes up to and including walk-in rooms. The store also advertised the models 50 and 80 Amana freezers. The advertisement's headline read, "Some day you'll wonder how you ever got along without a home freezer. Select yours now from our complete stock."

SMALL UNIT PRICES LISTED

Jordan & Wollman, 121 E. Bijou, took two large advertisements on separate pages to present the 4-cu. ft. Hotpoint freezer in one and the Deepfreeze line in the other. Prices of the smallest units in both lines were listed in the advertisements. Features of each brand were outlined.

Manitou Electric Service, 120 Canon Ave., also promoted the Hotpoint freezer but emphasized liberal terms "as low as \$31.90 down" and small payments on the balance. The economy theme "Cut 'High Food Costs'" was headlined.

A second Deepfreeze advertisement was run by the Colorado Springs Music Co., 107 N. Tejon St. Three models were pictured but only the price of the smallest was given. The dealership also carried a smaller advertisement on another page featuring the Maytag freezer which was headlined, "Come in and see how it pays for itself." This freezer was listed at \$299.50.

An almost identical advertisement on the same freezer appeared directly above this one. It was inserted by the Maytag Appliance Co., 108 S. Tejon St.

PRICE CUT OFFERED

The Electric Center, with stores at 119 S. Tejon and 2511 W. Colorado Ave., carried two advertisements on the same page. By far the larger was one which shouted "Save \$50 on this brand new 210-lb. capacity Kelvinator freezer. Reg. Price \$269.95. Now \$219.95 while they last."

The second advertisement offered visitors to the store a free insulated frozen food bag for carrying frozen foods from the grocery.

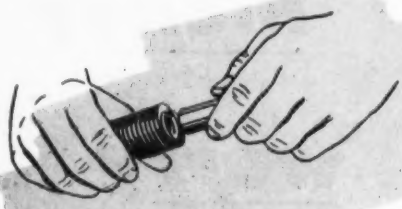
Burlew's Kalamazoo Appliances, 114 E. Colorado Ave., showed an 8-cu. ft. Kalamazoo freezer at \$289.50.

The Home Service Center, 217 Union Blvd., headlined its advertisement "Calling All Cooks." Copy continued, "Serve last season's goodies at summertime prices this winter. Choose an Orley home freezer. It offered a "special price" of \$189.50 for the 7½-cu. ft. freezer. The price offer was said to be for July only.

Lane Equipment Co., 508 S. Tejon, presented its 11.1-cu. ft. International Harvester freezer emphasizing such special features as the Lid Lamp and Zero-Larm.

You'll Want to Know These Important Facts about WOLVERINE TRUFIN

How Easy Connections are Made!



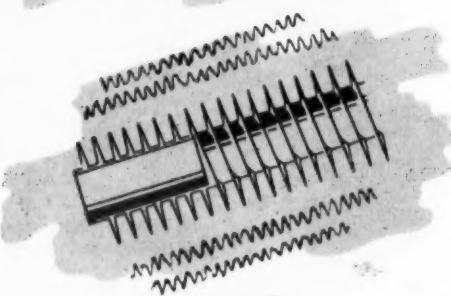
It is sometimes necessary when using finned tube to strip the fins from the ends of the tube for a pre-determined length prior to fabrication. Not so with Wolverine Trufin. This integral finned tube, held to inside diameter specifications, can be fabricated completely, and then ends can be sawed to length and inserted connections can be made by brazing any standard tube into the finned tube. Stripping of the ends is eliminated and savings in time and materials are effected.

How Easy Trufin can be Fabricated!



This integral finned tube can be formed into coils, hairpins, and other shapes much easier than plain tube since the fins act as a support to the exterior. Thus, shorter bends can be made without the use of a mandrel inside and support blocks on the outside.

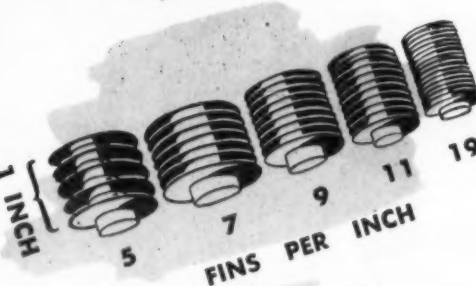
How Much Endurance Trufin Has!



It is suitable for nearly all kinds of heat transfer work—heaters, coolers, interchangers, condensers, and many other applications. Vibration does not deteriorate fin efficiency.

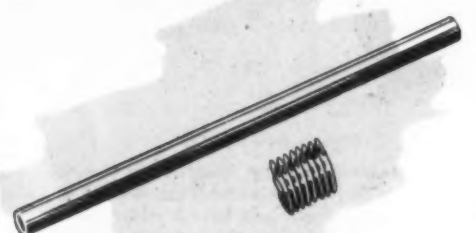
Since the fins are integral with the tube itself, it cannot be impaired as easily as other types of finned tube by corrosive conditions.

How Many Sizes and Alloys!



Trufin can be had in 5, 7, 9 and 11 fins per inch in inside diameters ½" to 1". It is also available in 19 fins per inch (held to root diameter specifications) for use in shell and tube condensers. Alloys (in 19 fins per inch) to meet most popular demands are available.

How Much It Multiplies Surface Area!



The equivalent outside surface area of a nineteen-inch length of plain tube, ½" diameter, for instance, can be obtained in just one inch length of Trufin of the same diameter. That's compactness!

Let us send you our latest literature that tells more about Trufin—the integral finned tube—and its many outstanding performance values.

WOLVERINE TUBE DIVISION
CALUMET AND HECLA CONSOLIDATED COPPER COMPANY
INCORPORATED

1413 CENTRAL AVENUE

DETROIT 9, MICHIGAN

Add BEN-HUR BLUE to Your Freezer Sales Force

Another First in BEN-HUR FARM AND HOME FREEZERS

COLOR BEAUTY is a trail-blazing sales feature that BEN-HUR Dealers are turning into bigger sales records every day! It's a traffic-stopper that gives you a chance to turn the casual shopper more easily into a proud freezer owner! It's an eye-catcher that wins admiration at first glance — and assures proud satisfaction in home color harmony even while the BEN-HUR Freezer goes on to pay for itself in food-saving and meal variety.

Easier Sales — Low Dealer Inventory

BEN-HUR'S combination of design-beauty and engineered food-freezing perfection keeps Ben-Hur Dealer inventories low. And, because the feature-packed BEN-HUR Freezer is its own best "quota buster," dealer franchises need not be based on rigid volume demands. This means happier dealer relationships, highest results for your selling effort—in freezer sales, profits, and long-lasting customer satisfaction.

Be SURE to check the BEN-HUR Dealership story today! Start now towards a banner BEN-HUR YEAR!



BEN-HUR 12.5 Cubic Foot Model 2129. Other sizes: 9.2 and 18.45 Cubic Feet.

BEN-HUR MFG. CO. Dept. AC 634 East Keefe Avenue, Milwaukee 12, Wis.

BEN-HUR FARM and HOME FREEZERS
HEALTHFUL LIVING THROUGH FROZEN FOODS

Florist Installs Chipped Ice Machine



Looking from the local sales department of the Niesen Co., wholesale flower merchant in Philadelphia, we see the three doors opening into the refrigerated areas of the firm's new building. The large refrigerator measures 65 x 20 ft. and is used for general flower storage. A smaller room is used for expensive items such as orchids. Also included in the building is a chipped ice machine for packing flowers for shipping.

Van Linden Introduces Continuous Freezer for Frozen Custard, Ice Cream

PASADENA, Calif.—Van Linden, Inc. here is introducing the new "Silver Ribbon" model of the Van Linden continuous freezer for making frozen custard, ice cream, sherbets, and frosted malts.

Claimed as a new feature is an entirely new precision dimensional tube with a new centrifugally controlled refrigerant system. Other features include automatic controls, instantaneous freezing application, and automatic continuous operation, plus draw off head.

Construction feature include spun stainless steel mix tank with rounded corners for ease of cleaning, new-type sturdy dasher, adjustable legs, simple heavy duty construction easily disassembled for cleaning purposes, finish in stainless steel.

The Silver Ribbon model 175 has a capacity of 10 gal. per hour. Refrigeration is furnished by a 1-hp. water-cooled condensing unit, and a ½-hp. dasher motor is used. It is 27 in. wide, 40 in. deep, and 55 in. high. Other models are available in 25, 30, or 50-gal. capacities, or larger sizes to order.

New plant facilities and the general offices of Van Linden, Inc. are at 1074 E. Colorado St. here. A. W. Schouten is president of the firm, L. F. LaDue, vice president; M. Jacobs, secretary and treasurer; and D. W. Muessel, general sales manager.

The company originally headquartered in Milwaukee, but moved to Pasadena to take advantage of increased production facilities.

Tonic for the 'Profit & Loss Statement'



Profits went up and losses from shrinkage went down when the Mehlinger Market installed three 10-ft. Frigidaire double-duty self-serve cases. One of the three ½-hp. Meter-Miser units serving the cases is visible in the extreme upper left corner.

ST. LOUIS—Three 10-ft. Frigidaire double-duty self-service display and storage cases, operated by three ½-hp. rotary Meter-Miser refrigerating units, keep dairy products, fresh fruits, and vegetables at the shopper's fingertips in the Mehlinger Market.

The trio of Meter-Misers serving the display cases were suspended from the ceiling each by three flexible metal rods, when the installation was made by J. J. Tenge, Frigidaire commercial refrigeration dealer here.

The market, owned and operated

by George Mehlinger, Jr., for about 30 years has increased its profits on fresh fruits, vegetables, and dairy products by approximately \$100 per month or about 33½% since the modern equipment was installed, replacing dry-type display racks.

Along with increasing profits, Mehlinger declared that produce shrinkage losses were cut 10%.

"We save about an hour a day by eliminating the loading and unloading of old dry racks each morning and evening," he added.

Refrigeration Has Important Role In Storage, Shipment of Flowers In Wholesale Operation

PHILADELPHIA — Refrigeration plays a big role in the wholesale florist operation of the Niesen Co. here, both in the storage of flowers and in preserving them during shipment.

The firm's new building at 256-70 S. 23rd St. contains a large 65 by 20-ft. custom-built walk-in refrigerator for general flower storage, a smaller one measuring 15 by 20 ft. for storage of expensive orchids and gardenias, and a chipped ice making machine for use in the packing department.

The large refrigerator was made of concrete block lined with cork insulation by the Armstrong Cork Co. of Lancaster, Pa. York refrigeration units and diffusers were employed. The floor is of concrete and has a slightly concave surface dipping toward several drains so that flower offal can be quickly washed away with hoses. The smaller refrigerator is constructed in the same manner.

The large refrigerator is divided lengthwise in two parts. One is devoted to the storage of flowers for out-of-city shipments and the other is used for local sales. Communica-

tion between the two sections is by three large doors. Entrance to both the front and back of the refrigerator is also by three large doors.

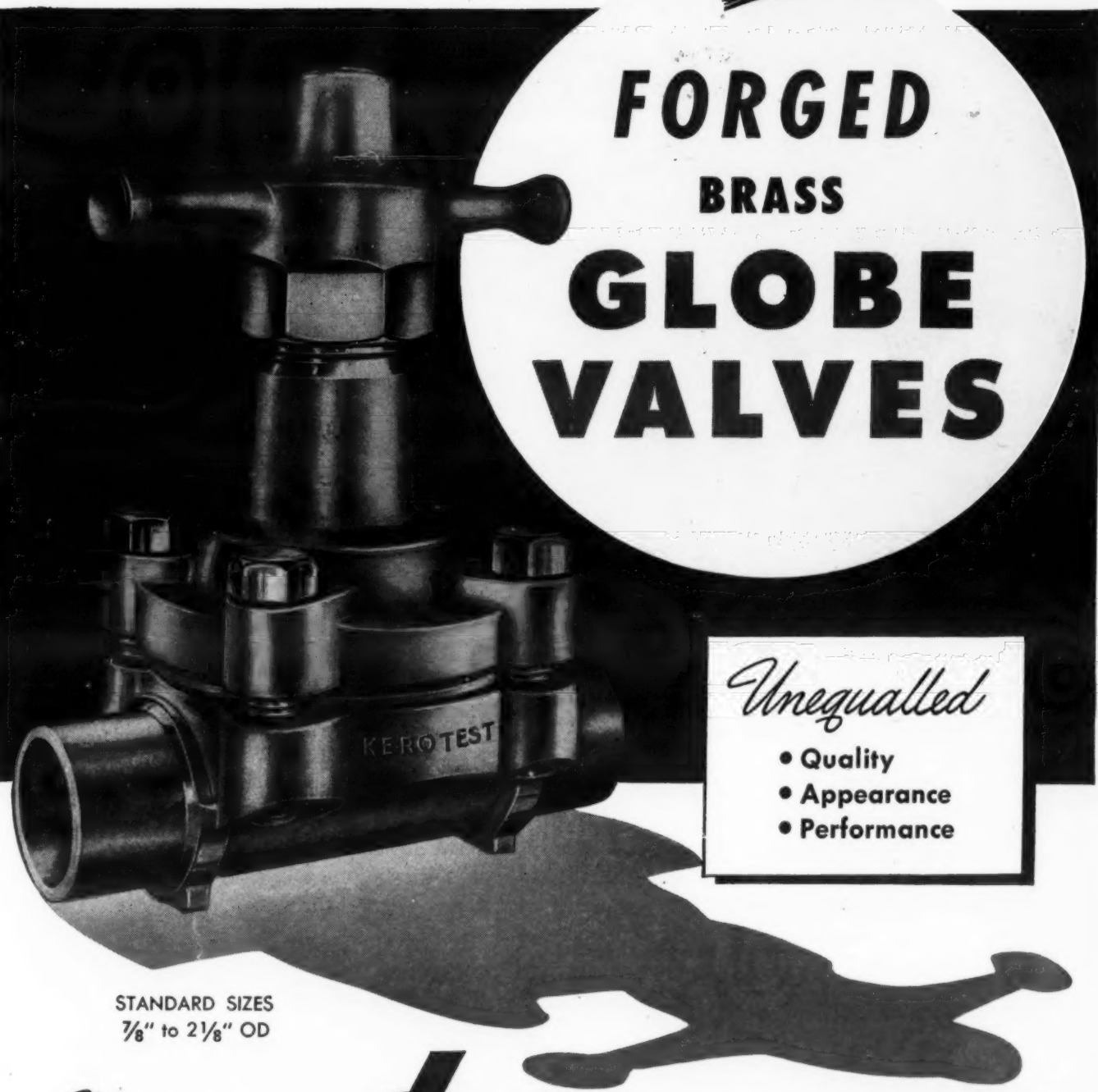
Particularly in the hot summer months, rapid transfer of incoming flower shipments into the refrigerator and of outgoing shipments to the packing department is essential to prevent spoilage of the flowers, the management pointed out.

To expedite the movement of flowers, scores of aluminum tables are used. Incoming flowers are placed in metal vases of water and stored in the refrigerator on these tables.

In the mornings, the tables are wheeled out to the packing department and the local sales department for the day's business. At the close of business, the remaining flowers are wheeled back into the refrigerator.

The chipped ice maker, a York unit, is used in the packing department for preparing flowers for long distance shipping. The machine operates constantly and the overflow of ice is chuted to the basement for use the next morning when the influx of flower receipts is heavy.

Another **KEROTEST** First!



**FORGED
BRASS
GLOBE
VALVES**

Unequaled

- Quality
- Appearance
- Performance

STANDARD SIZES
7/8" to 2 1/8" OD

At your

KEROTEST

Wholesaler NOW!

AMERICA'S FIRST NAME IN QUALITY VALVES

KEROTEST MANUFACTURING CO.

PITTSBURGH 22, PA.



**HORSEPOWER--
harnessed by HUSSMANN!**

HUSSMANN Condensing Units are made in sizes from ¼ HP to 2 HP, in both air-cooled and water-cooled types—to deliver efficient, effective refrigeration economically, quietly, and safely.

Vibration and noise are reduced to a minimum. The compressor and fan have been designed, and belt guard added for greater durability and more modern, streamlined appearance. The load is completely safe for all motors of proper rating, regardless of manufacturer.

And, to facilitate servicing and belt adjustments, a belt tightener has been added to the larger sizes. Furthermore, many parts are interchangeable throughout the entire line, for the sake of simplifying operations.

The newly improved HUSSMANN line of Condensing Units is truly an important contribution to the Refrigeration Industry—another outgrowth of HUSSMANN Know-How.

HUSSMANN REFRIGERATION, INC.
HUSSMANN BLDG., ST. LOUIS 8, MO.

THE NAME THAT STANDS FOR Completeness IN FOOD STORE REFRIGERATION EQUIPMENT

June Sales of Dealers Reporting to Census Off 1% from June '48

WASHINGTON, D. C.—June sales of independent household appliance dealers reporting to the Bureau of the Census were down 1% from June, 1948, but up 3% from May, according to the agency's monthly retail trade report.

Dealers' sales during the first six months of this year fell 9% under the first 1948 half, the report showed. Sales in June by radio-household appliance dealers in selected cities showed wide variations compared with a year ago, ranging from an increase of 22% in Los Angeles to a decrease of 7% in San Francisco. Sales by cities were reported as follows:

City	June 1949 from June 1948	6 Mos. 1949 from 6 Mos. 1948
Los Angeles	+22	-6
San Francisco ..	-7	-14
Chicago	+13	+7
Detroit	-1	-9
St. Louis	-6	0
Buffalo	+7	+9
New York	-4	-4
Philadelphia	0	-4
Milwaukee	0	0

June sales by all types of independent retail stores were 1% under a year ago and the same as in May. For the first half of 1949, sales dropped 1% below the like period of the preceding year.

Austin, Texas Dealer Suffers Big Fire Loss

AUSTIN, Tex.—The air conditioning service unit and appliance service departments of the Calcasieu Lumber Co. here were wiped out by a fire which swept through the company's new brick-and-steel structure and caused an estimated loss of \$250,000.

W. S. Drake, Jr., company president, could not give an actual estimate of the damage until fire insurance adjusters had an opportunity to investigate. He said that the extent of damage to the west wall of the company's new building housing the air conditioning units and a variable inventory could change the actual loss by \$100,000 either way.

The fire was the worst in this city in two years and it took 12 hours for local firemen to extinguish it. The fire broke out shortly after 2 a.m. on July 30. A night watchman had checked the building some 15 minutes before and found everything in order. Cause of the fire has not been determined as yet.

Drake said the company's main building was covered by insurance but that a quarter-block lumber storeyard had little coverage and would be a total loss.

Grady Casey, Kelvinator Zone Official, Is Dead

CINCINNATI—Grady L. Casey, 39, household sales manager for the Cincinnati zone of Nash-Kelvinator Sales Corp., died of a heart attack on Aug. 4 at his home. He came to the local office in 1944.

Television Studio Cools 'Essential Areas' First, Makes Provision for Air Conditioning Later

DAYTON—Twenty-five tons of air conditioning have been installed in the television studios and transmitter building erected here for Miami Valley Broadcasting Co.'s new WHIO-TV station, and provision has been made for the addition of more cooling equipment in the future.

Erected by the Austin Co., the station's air conditioning system is presently limited to such essential areas as the studio control and clients' audition rooms, announcer's booth, transmitter control room, film processing department, and other equipment centers.

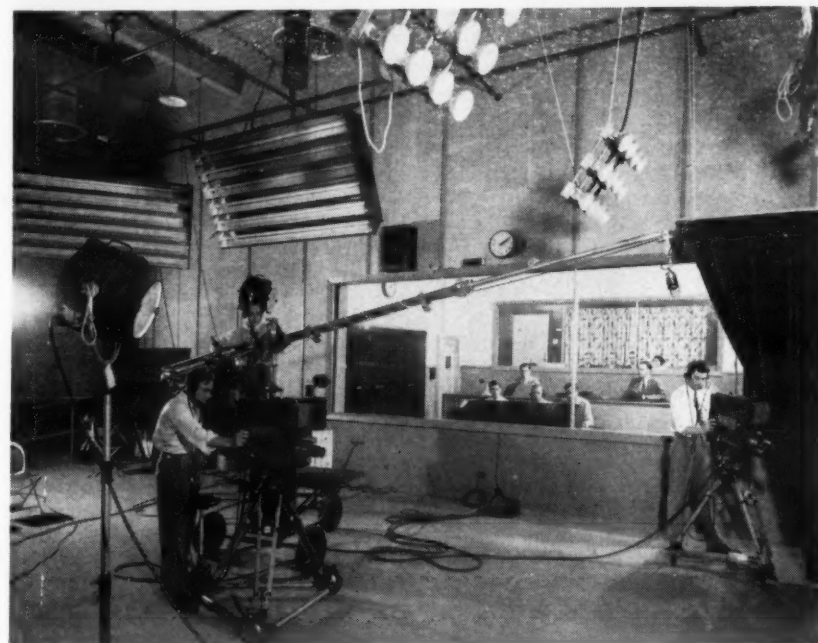
The cooling system, which consists of two Frigidaire compressors operating in tandem off a single motor and a McQuay air conditioning unit, handles approximately 7,000 c.f.m.

Serving the studio proper and other areas which will be air-cooled at a future date is a 7,850-c.f.m. ventilating unit.

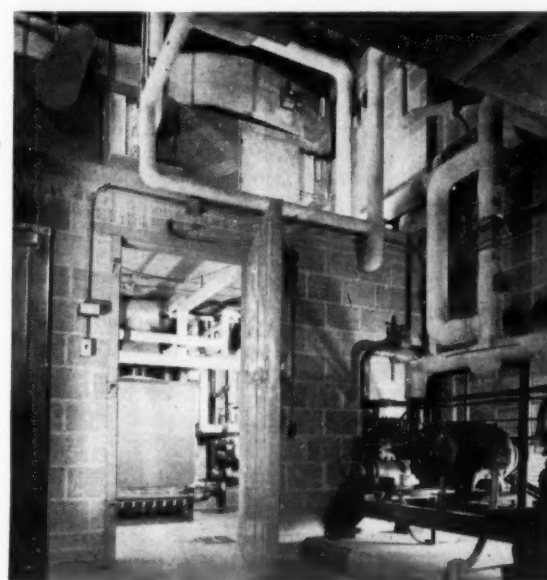
Part of the television transmitter is connected to a water-cooling system, but most of the equipment racks are ventilated only. Vertical stacks directly over the racks lead into ducts which exhaust the heat generated by the electronic equipment.

This part of the system is so designed, however, that in winter this heated air can be recirculated throughout the building to augment the forced-air heating system supplied by a Bryant gas-fired boiler.

In the compact, multi-level, one-story layout, which Austin engineers developed around the studio proper,



Miami Valley Broadcasting Corp.'s new WHIO-TV television studio in Dayton, measuring 30 by 49 ft., was designed by The Austin Co. to provide maximum flexibility for television broadcasts, and effective acoustical control. Lower wall areas are of concrete, while upper walls on three sides have alternate bands of perforated and flat asbestos cement board to afford the desired acoustical control. The metal roof deck and the ductwork have been left exposed for the present.



A pair of Frigidaire compressors operating in tandem provide 25 tons of refrigeration for the McQuay air conditioning unit, which has been mounted on a concrete floor slab directly above the boiler room. This system handles approximately 7,000 c.f.m., and is regulated by economizer controls. It serves the television control room, clients' audition room, projection room, announcer's booth, transmitter control room, film processing area, and the mechanical shop. Heating is provided by a Bryant gas-fired boiler, which can be seen through the doorway. A corner of the water-cooling tank serving the television transmitter can be seen on the left, and a portion of the studio return air duct in the foreground above.

all of the basic facilities required for television broadcasting have been grouped for maximum convenience and visual control.

By grouping the studio, studio control room, and other mechanical facilities directly related to television production in one area which, except for a studio outside wall, is completely surrounded by corridors, the working functions of television have been effectively isolated from all other activities.

The studio proper, 30 by 49 ft., has been located at ground level and is directly adjacent to a large garage which accommodates a 22-ft. mobile unit and the station's motion picture truck. This permits the transfer of television cameras and other equipment between the studio and the field units with a minimum of time loss.

Actual production of television programs, including control operations, as well as action on the television stage, can be observed from the reception lobby as a result of the simple terraced arrangement. A special clients' viewing lounge, which opens directly onto the reception lobby, overlooks the studio control room, and the television studio stage beyond it, so that when drapes—used to close off the view for private auditions—are open, the whole show can be seen from the lobby.

The announcer's booth occupies an angle between the studio control room and stage, and is elevated to afford an over-all view of both areas, as well as into the projection room which adjoins the booth.

Television and FM-transmitter equipment are situated in one corner of the building on a direct line from the studio control room to the transmitter tower.

Fiber acoustic ceilings have been used throughout the lobby, offices, and various control rooms with a combination of recessed, flush-type fluorescent troffer lighting and diffused spots. In the studio proper, where a clearance of 20 ft. has been provided, the Fiberglas insulated metal roof deck has been left exposed above the pipe grid, for the sake of flexibility to cope with fixture developments in television production techniques.

All the facts of value favor CHEVROLET ADVANCE-DESIGN TRUCKS



America's truck operators are wise buyers. They know the value of prime power with economy . . . of massive load capacity . . . of outstanding quality, durability and handling ease. They know the advantages of the latest and finest features and of greater driver comfort

and convenience. And they know that all the facts of value favor Chevrolet trucks to an overwhelming degree . . . that they cost less to operate, less to maintain, and have the lowest list prices in the entire truck field. That's why they use Chevrolet trucks more than any other make!

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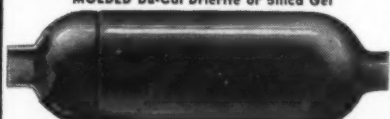
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REMCO INCORPORATED
EELINGVILLE, PENNSYLVANIA

INSIDE DOPE

by GEORGE F. TAUBENECK

(Concluded from Page 1, Column 1)
reputations to protect, are not only inefficient and wasteful; they're usually downright dishonest.

Instead of building, they destroy. Thereafter, further erasing of personal liberties ensues, because the Rulers try to compensate for the extravagances and losses of their pets by decreeing even more drastic authoritarian control measures.

All this is a matter of record. It happened in ancient Egypt, Persia, Cathay, Greece, and Rome. And in modern times it has happened in Japan, Germany, Russia, and Italy (yes, and in New Deal America, too!).

Still, some malcontents can't see the light. They don't learn from history (most of them probably haven't read any history).

"When a 'new dealer' (off the bottom of the deck) promises 'better pay, shorter hours' the ignorant are apt to follow his lead, even though he holds all the trump cards in his hand. They'll even condone violence and thievery . . . if such inhuman impulses are directed against other segments of their fellow men (like racial minorities, or 'the rich')."

Despite the fact that the Black Government demagogue liquidates existing capital, murders uncommon men, tortures minority groups, alienates neighboring nations, ensures national bankruptcy, stamps out personal freedom, and corrupts the youth of his country, the ignorant will follow him when he promises them an extra dollar *this week*.

They are benumbed by their insufficiency, they are vitiated by world-wide uncertainty, and they want to blame all their troubles on somebody else.

That's how Communists are born. And that's how backward nations become backward, and stay that way.

Otherwise decent citizens sometimes make things tough for their friends and neighbors and relatives by joining labor unions, too, for the same psychological reasons. In the pursuit of "security," they accede to injustices perpetrated by Union Bosses (who are more concerned with dues collections than with the common good of all).

When their Union Bosses write contracts which level all wages, regardless of the skill or energy of individual workers, and which promote according to seniority rather than merit, labor rank-and-filers are contracepting their own hopes and rights as MEN.

And, they balk their neighbors and friends by stringing along with the monopolistic practices and unwarranted prices which Labor Bosses coerce.

What's more, these ordinarily decent citizens who join unions condone, probably without meaning to, the hounding and physical torturing of workers who do try to perform a given task to the best of their abilities. (Union Bosses set labor productivity rates at the pace of the slowest, dumbest dues-payers, and get tough with those who can turn out more work and do.)

Likewise, normally decent citizens who belong to unions help kill the Golden Goose by agreeing that "featherbedding" (paying the least competent for not working at all) is a social necessity.

Even worse, in the long run, they insist that their Union Bosses "negotiate" even-higher wage scales each year, even though they do no more to earn that extra pay.

Because all wage increases, like all business taxes, must be passed on to the public in the form of higher prices, this ever-upward spiraling of wages simply compounds inflation and hits the union member where it hurts most . . . on the button of his purse.

Ever-upward wage corkscrewing reduces the number of jobs for dues-payers by bankrupting the smaller firms whose capital is limited, while it drives the wives of still-employed union members insane trying to purchase food and clothing and "stuff" at higher and higher prices.

Where's the gain for the *dues*-payer? Isn't he worse off, actually?

Cutting Off Your Nose To Spite Your Face

Historians have noted that monopolies—whether they be labor unions or financial cartels—always reduce purchasing power (*real* wages).

At the same time, monopolies force investment capital into hiding, because investors figure that there's no use bucking an entrenched interest. When a J. Pierpont Morgan or a John L. Lewis dominates any industry, investors will shy away from it.

Long-established businesses in these dominated industries peter out, also, to the dismay of their customers, because the possible return on additional capital investments necessary for upkeep and modernization in these businesses seems to be *nil* when labor costs are exorbitant.

Result: fewer jobs in those industries, less money for their higher-priced suppliers, products for their customers, much less activity all up and down the line; and, in time, a Depression.

Labor Union Bosses can push up paycheck figures for their dues-payers for *awhile*, but seldom do they contribute to lasting prosperity and the common good of all. Especially is this true when the John L. Lewises and Woodruff Randolphs balloon labor charges into the stratosphere, with the effect that harried corporate managers can't find the cash to buy better machines to reduce production costs equivalently.

These managers may be sincere in their desire to pay their fellow workers more and more money. But they are also up against natural price ceilings, which customers set.

When the irresistible force (spiraling wages) meets the immovable object (price resistance) the only answer to this squeeze is better machinery.

Faster, more efficient machinery can reduce unit costs—thus holding prices steady while making allowances for higher wages. But where can a manager dig up the money to buy this life-saving machinery? Out of profits, in normal times. In these days of confiscatory taxation and exorbitant union wage-scales he hasn't a chance, however. He can't save enough out of pared-down profits to buy the new machines his company needs to keep the sheriff away.

If it weren't for penalizing taxation, and such practices as "featherbedding" (the end result of share-the-wealth and share-the-work propaganda) there'd be no ceiling to business expansion in a free country.

Uncommon men would work themselves into an early grave chasing the rainbow of quick fortune. Having made more money than they could spend (in working 'so hard they wouldn't have learned how to play) they'd re-invest their surplus savings in new machinery and ideas and enterprises. By so doing:

They'd reduce prices to consumers, raise wages for craftsmen, and multiply the number of available jobs.

Incidentally, they'd make the whole world happier, and help "average" families attain the peace-of-mind which derives from comfort, convenience, safety, opportunity, and liberty.

The Burden of Leadership

Today the United States of America is shouldering the weight of the world, like the mythical Atlas. Without our generosity, civilization would collapse.

Why do we bear this staggering responsibility? Because in this country energetic men have been granted the privilege of saving money and re-investing it—alongside and along with the obligation of 'round-the-clock toil—in enterprises of their own conception and choosing.

Their unlimited faith in America's future, and their own possibly naive self-confidence, have coagulated with our natural resources to build a superabundant nation. Upon the tit of that superabundance almost everybody in a bankrupt world now sucks desperately for sustenance.

Personal energy, the "get ahead" spirit (Horatio Algerism), aided by economic and political freedom, have fissioned in the United States to build up an unmatched capital structure (savings). Such "risk money" for new conceptions, and investments in labor-saving machinery for "going" businesses, have been utilized for the expansion of our own country in the past. Now these savings are being tapped for the rescue of Europe and Asia.

These banked savings of uncommon men in the United States, for the most part, haven't been dissipated on yachts, diamond bracelets, and extravagant palaces (as they would have been in Russia, China, or India).

Rather, they have *gone to work* to provide more jobs, bigger paychecks, more productive machinery, and an ever-zooming-upward manner of living for everyone in our country.

In America, uncommon men (the self-made variety) seldom indulge in what Thorstein Veblen termed "conspicuous waste." Rather, they've tossed their surpluses back into the pot and even into flagrant business gambles . . . all of which, whether individually profitable or not . . . have distilled into a bigger and better and mightier United States of America. Handsome emoluments for personal success, in our Wizard-of-Oz land, have been transfused right back again into America's palpitating and supercharged economic arteries.

In totalitarian states, excess stipends are spent for jewels, gold, mansions, harems, private armies, and other forms of "conspicuous waste"—thereby removing capital from the economic bloodstream.

We're much smarter, we Americans, and so we're almost the only solvent nation left on Earth. The Burden of Leadership is now ours. The penalty for achievement is responsibility for the indigent.

Take Care of YOURSELF

The entire so-called Christian Era . . . some 2,000 years of human experience . . . presents an overwhelming body of historical testimony to prove that the Law of Personal Responsibility is inexorable. This Law can be maximized in these words: "Take care of yourself, and then you can take care of your fellow men."

That's what the United States of America has done, and is doing.

Whenever and wherever scared people or lazy people have dumped all their worries on the laps of Fuehrers, they've suffered humiliation and poverty. Whenever and wherever vigorous men have insisted upon

getting elbow-room for their slashing-out innovations, that civilization has boomed. Q.E.D.

Communists will argue: Uh-huh, but the "take care of yourself first" type of civilization undergoes Depressions, too.

Yeah. But he-men recuperate quickly from wounds, and rebound joyously from set-backs. When they don't have to consult a rajah or a high priest of bureaucracy, they exercise their ingenuity and start things moving again.

Ingenuous remedies for Depressions concocted by uncommon men in a whang-dang "get thar fustest with the mostest" Free Enterprise civilization put the "whammy" on the lugubrious dialectical materialists. These remedies are invented when the promise of big prizes to the ingenious overcompensates for the fear of failure amongst the timid.

It's also important that the will-to-work be a national tradition. (When the late Calvin Coolidge was President of the United States, one of his sons operated an elevator in Washington's Willard hotel to earn recreation money). That footnote exemplifies and underscores the traditional will-to-work in America, and characterizes the Free Enterprise version of democracy.

That unparalleled combination of the right to choose your leaders, and to select the way you want to live (possible only in the United States of America) stimulates a country's mutual well being, and purges the national atmosphere of insidious poisons.

All mankind enjoys higher echelons of happiness when the twin freedoms—democracy and enterprise—are unchained.

Investigate


GOLD BOND

ZEROCEL

THE ANSWER TO YOUR LOW TEMPERATURE INSULATION PROBLEMS

HERE'S 7 REASONS WHY

- 1 Odorless
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Solve Your Problem with the New ROLL-OR-KARI Dual Trucks

Patented Step-On-Lift • Folding Handles
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Gentlemen: Please send me a FREE copy of the new Gold Bond Zerocel Booklet, "Fireproof Refrigeration Construction."

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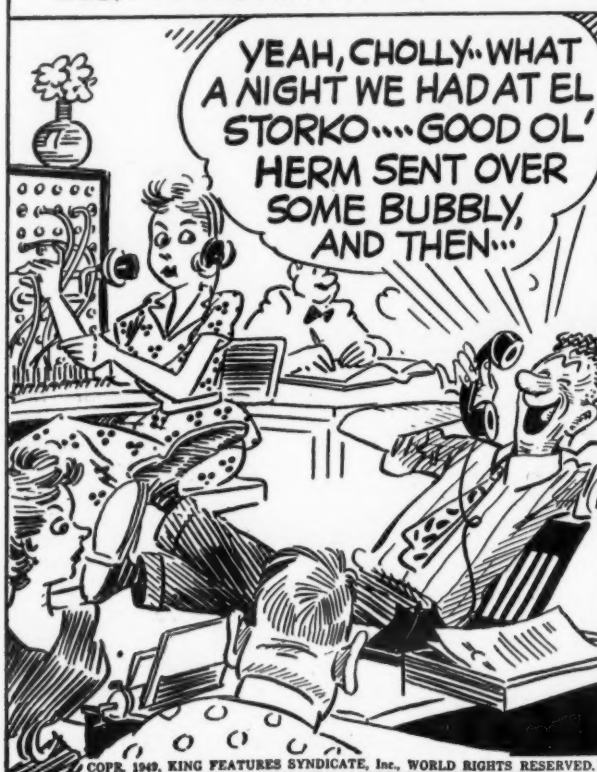
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Should You Advertise Through the Mails?

DIRECT-MAIL advertising is often a waste of money. Validity of this cannily-true statement seems to vary according to the square of this distance from the advertiser to the prospect.

Thus, while a national manufacturer might waste thousands upon thousands of dollars on a poorly directed mail advertising program (it's difficult to assay on a mass basis the reactions of individual recipients of volume-produced letters) a specialty dealer who lives in a relatively compact community—and who thus presumably knows intimately the clientele he is addressing—might find that direct-mail advertising can inject hormones into his business.

Before he sets out upon a direct-mail advertising campaign, however, the cagey dealer will ask the following questions:

- (1) Will it be profitable?
- (2) How much of the total advertising appropriation should be apportioned to direct mail?
- (3) How are the lists assembled and used?
- (4) Who will evaluate these direct-mail lists, and see to it that they are reasonably well-chosen?

To neophytes in the advertising business, "circulation"—no matter how acquired—seems important. And that's why some of these beginners buy advertising space in free-circulation publications (cheap direct mail) such as "shopper" throwaways.

But more sophisticated space-buyers lay especial weight upon a paid-circulation publication's subscription renewals—the percentage of those subscribers who pay relatively "big money" to see what the editor's of that publication will say next, and who have learned to reply on their advice.

In connection with local direct-mail campaigns, every specialty retailer should promote only those products which have been established in the minds of the buying public for a number of years—before he resorts to this type of advertising.

(It should be acknowledged, of course, that many customers will make their selection on the basis of price, styling, exclusive features, and other advantages offered by the various manufacturers at the time of purchase. However, it's still wise to tie up direct-mail promotion with publication advertising.)

It is important for the dealer to choose a sponsoring "resource" which will provide him with a planned advertising program sufficiently flexible and aggressive to meet the new and varying competitive conditions which will arise in the business.

The manufacturer who offers his best dealers a promotional program that is modern in every respect can become one of those dealer's important assets.

And as for the manufacturer who does give his dealers direct-mail pieces, there are two roads he can travel—one being to appoint all the dealers he can on the strength of that added promotion. This is a sad, unrewarding road.

It leads to tragic highway wrecks.

Smoothest road any manufacturer can travel is to appoint the minimum number of retail outlets in any given market which will obtain a fair and reasonable share of his industry's sales in that market.

This policy will give every dealer a chance to make a profit.

The local dealer who is so fortunate as to secure a valuable manufacturer's franchise can well afford to indulge in a direct-mail promotional campaign.

Otherwise, it's a waste of money.

Do You Have 'One Foot In the Door'?

KOLD-HOLD
builds better plates
for every application

There are two big reasons why you can count on the performance of Kold-Hold Hold-Over and evaporator plates for every refrigerating installation.

FIRST: They are designed and engineered primarily to refrigerate efficiently and economically.

SECOND: They are built with care and to quality standards which assures that each and every Kold-Hold plate does its designed job to the fullest degree of satisfaction. Before any plate leaves the factory it is pressure tested under water and completely dehydrated.

This combination of engineered design and controlled construction is your best guarantee of peak performance.

Would you like to know more about how Kold-Hold plates can be used for quick freezing, chilling and holding, short period cooling, or for "Hold-Over" truck refrigeration? Complete descriptive literature is yours free — write today!

Labels in the advertisement include: FOOD LOCKERS, PLATE STAND, LINER, TRUCK PLATES, MEATS, HANGER BANK, PACKAGE UNIT, and CONVERSION UNIT.

KOLD-HOLD

Jobbers in Principal Cities

PROCESSING TRANSPORTATION
protects every step of the way
STORAGE

KOLD-HOLD MANUFACTURING COMPANY • 500 E. HAZEL ST., LANSING 4, MICHIGAN

Refrigerated Equipment for Technicolor Movie Making In Africa

Two 1½-hp. gas-line-driven Copeland condensing units were installed in this truck by Ben Hyatt (left), Detroit refrigeration contractor, to keep Technicolor film at 32° for Metro-Goldwyn-Mayer, which is taking the truck and a safari of Hollywood actors and technicians to Brit-



DETROIT — Now on its way to British East Africa, a specially designed truck which was built and equipped with refrigeration here will preserve reels of Technicolor film before and after they're used for the Metro-Goldwyn-Mayer's "King Solomon's Mines" to be produced in Africa.

"Apparently it's important to keep the Technicolor film at the right temperature," explains Ben Hyatt of Copeland Authorized Refrigeration Service, the contractor who installed the refrigeration system in the body that was built on a 2-ton Dodge chassis by National Body Corp. here.

"We were told that the film must be kept cool before it's exposed, but that this is even more important after the scenes are shot," Hyatt said, adding that he understood Errol Flynn and Deborah Kerr would probably play the leading roles in the movie.

In addition to this somewhat unusual application, the refrigeration system has a number of other interesting points.

The refrigerated compartment where the film will be stored measures 7 ft. wide, 4 ft. high, and 3 ft. deep. Insulated with 6 in. of Fiberglas, this compartment runs the full width of the truck. It will have a divider to make two compartments so that unexposed film can be stored on one side, exposed film on the other.

This refrigerated compartment is at the front of the body, the remaining part of the body being fitted out as a small film-processing laboratory.

Here test strips of black-and-white film will be developed. If the test strips are satisfactory, the camera technicians can safely assume that their exposures on Technicolor were correct. The latter films will then be flown back to the United States for processing.

The low sides in the refrigerated

compartment consist of two Kold-Hold eutectic plates, one mounted on the ceiling, the other on the forward bulkhead, which are designed to maintain 32° F. in the compartment. They are charged with an 18° eutectic solution.

Mounted directly beneath this compartment are two 1½-hp. Copeland air-cooled "Freon-12" condensing units, each directly connected to a 5-hp. Briggs & Stratton gasoline engine. A governor on each gas engine will regulate the speed so that as the refrigeration load becomes greater the engine will speed up.

One unit will handle the load, which is figured on a 120° F. ambient temperature, but the second machine will serve as a spare in the event of breakdown. A set of hand valves will permit a quick change of circuits from one condensing unit to the other, explains Hyatt.

"The chief reason for using hold-over plates is that the condensing units can be operated only at night," Hyatt explained. "The truck will have to be kept as close to the cameras as possible, we were told, but here the noise from the gas engines would be picked up on the sound track."

"By operating the units at night when no scenes are being shot, the solution in the hold-over plates is frozen and should maintain about 32° during the day."

If the temperature in the refrigerated compartment should rise too high for any reason an alarm bell mounted on the front of the body just behind the truck cab will ring. The alarm is operated by the White-Rodgers control connected to a thermostatic bulb in the compartment. This is set to ring if the temperature reaches 40° F., Hyatt said.

A toggle switch is wired into the alarm bell circuit so it can be shut off after its ringing has attracted

the operator's attention. Also mounted on the body above the alarm bell is a dial thermometer.

Control of the refrigeration units is provided by two Penn temperature controls, one for each system. Also incorporated in the system are an Alco thermostatic expansion valve, an Alco thermo-limit valve, a Superior drier, and a Superior heat exchanger.

The thermo-limit valve, Hyatt said, is intended to maintain a constant pre-determined pressure on the plates and thus relieve the load on the compressor and gas engine.

As an aid to servicing the system, Hyatt installed a hand shut-off valve on each side of the expansion valve.

"We're also shipping along a few spare parts, but I've been trying to

persuade them that they ought to take along a refrigeration mechanic too," Hyatt remarked. "No, I don't want to spend six months in Africa myself, but somebody else might."

"So far I haven't had any success with that suggestion, so we are tagging every part of the system with numbers which will be identified on a list we'll prepare. This ought to help some."

Whitesell Has New Store

VANDERGRIFT, Pa.—The Whitesell Radio & Electrical store recently held a grand opening at its new location here, A. J. Whitesell, owner, has reported. The store handles the Norge line of home appliances.

Cooling Found Vital In Peanut Butter Production

PITTSBURGH—More efficient way to cool hot peanut butter has been worked out for Lik'em Peanut Co., Inc. by Steel City Refrigeration Co. here, says Joseph Claggett, engineer, who reports it's the first job of this type the firm has handled.

This peanut butter manufacturer competes with large plants and operators who themselves employ their own full-time engineers on such jobs. Peanut grinding generates so much heat that in making peanut butter oil in the peanuts had risen to the top.

Problem was to take peanut butter at 180° when it was almost soft enough to pour as a liquid, and cool it in one hour to 70° so it would not

(1) Crack the jar in which it was being packed, and

(2) So the oil wouldn't separate from the peanut butter.

Hot peanut butter now is placed in a cooler having racks in front of cooling coil, and with the racks (after much experimenting) spaced far enough apart to allow sufficient air circulation.

Cooling equipment comprises one 6 x 8 Bush ceiling cooler and two 6 x 8 bakery racks. Average of 1,000 lbs. (capacity 1,400 lbs.) of peanut butter is cooled per hour.

Tappan Ups Production 10%

MANSFIELD, Ohio—Tappan Stove Co., announcing a 10% increase in production, has rehired 50 workers.

A total of 150 of the 200 employees laid off earlier in the year has now been recalled.

Cool

AS A MOUNTAIN SPRING...

DEPENDABLY Controlled by Automatic Expansion Valve

You build sales for yourself when you replace water cooler valves with A-P Automatic Expansion Valves! They maintain constant evaporator pressures automatically and accurately — on units like water coolers, and others — where your load is fairly constant. Both Models 204 and 304 adjust quickly and easily to your system. Just a slight turn of the handy knurled knob located beneath the protecting moisture-proof metal cap, and your unit is ready. You'll get maximum evaporator efficiency, without frost-back, and accurate refrigerant flow under all conditions—dependable "performance insurance" that means service satisfaction on beverage coolers, milk coolers, candy cases, sharp freezers and many others.



AUTOMATIC EXPANSION VALVES

Standard equipment on thousands of domestic refrigerators, milk coolers, water coolers, beverage coolers, candy cases, sharp freezers, low temperature testing cabinets, and similar units.

TWO SIZES:

A-P MODEL 304 — Capacities: 1 ton Freon 12, 1.7 tons Methyl, 1.5 tons Sulphur.
A-P MODEL 204 — Capacities: 1/3 ton Freon 12, 2/3 ton Methyl or Sulphur.

For customer satisfaction — be sure A-P Model 204 or 304 Automatic Expansion Valves are on your systems. They're stocked and recommended by progressive wholesalers.

AUTOMATIC PRODUCTS COMPANY

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DEPENDABLE

Refrigeration Valves
STOCKED AND SOLD BY GOOD REFRIGERATION WHOLESALERS EVERYWHERE . . . RECOMMENDED AND INSTALLED BY LEADING REFRIGERATION SERVICE ENGINEERS.



FIRST AGAIN!
Warren paces the fast food field... with refrigeration designed for Selling!



WARREN'S
NEW MODEL OMS
(Model OMS-10-g in Photo)
For Packaged Meats
and Dairy Products!

The NEW Warren Model OMS is a double-duty open-style case that SELLS to food men because it SELLS merchandise. Write today to Dept. 510-A for information about our interesting franchise offer!

Write Today!

The WARREN COMPANY
INCORPORATED
905 MEMORIAL DRIVE, S.E.
ATLANTA, 1, GEORGIA



What's New

Dishwasher Needs No Plumbing Connection



New dishwasher has hose connection to sink faucet, washing action being by motor-powered hydrojets.

NEW YORK CITY—A low-priced, fully automatic dishwasher that requires no plumbing installation and features a new dishwashing principle has been introduced by the American Dishwasher Corp., 229 Madison Ave. here.

Jules La Raus, president of the firm, said that the new dishwasher

will retail for \$169.50. From a single dial setting, the All-American will wash, rinse twice, dry, and shut itself off—all automatically, La Raus stated.

The complete washing cycle is said to take 15 minutes. Every dish, glass, cup, and piece of silver is water-scrubbed, front and back, by five motor-powered hydrojets, according to La Raus.

"This new exclusive high-velocity cleaning force works off and washes away the hardest-to-clean foods without injuring the most delicate china—all with only 3½ gals. of normal tap-temperature hot water," he declared.

The All-American is powered by a ¼-hp. electric motor and will operate anywhere regardless of water pressure at the tap, La Raus pointed out.

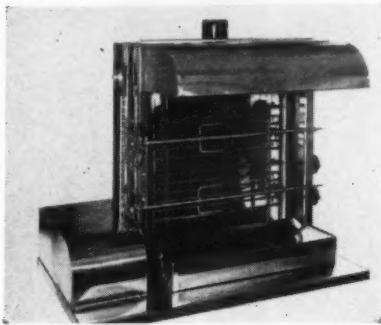
The stationary rust-resistant rack will hold the dinnerware for a family of five, he said. To operate the dishwasher, one hose attaches to the hot water faucet and the drain hose loops into the sink.

Company officials claim that the All-American is the first dishwasher that can be demonstrated right in the customer's home and left for a free-trial period.

It weighs 62 lbs. The cabinet stands 36 in. high, 22 in. wide, and 16 in. deep. It is mounted on casters for easy mobility.

To operate one hose attaches to the hot water faucet and the drain hose loops into the sink.

'Patty Bar-B-Q' Is All-Electric Machine



SEATTLE, Wash.—Sweden Freezer Mfg. Co., producer of soft ice cream freezers and refrigerated cabinets, has recently begun national distribution of the "Patty Bar-B-Q," an all-electric barbecue machine, through the Sweden Freezer Sales Co., 3401 17th Ave. West, here.

This addition to the Sweden line enables the company to make available a "package" for restaurant, drive-in, and fountain operation.

Of stainless steel and small dimensions, it can be placed in the window in view of passersby.

Other features include a double bank of three-heat, independently-controlled Calrod elements, adjustable to accommodate any shape of roasting product; ball-bearing-drive sprockets; 115-volt, ¼-hp. motor with safety coupling to eliminate slippage; adjustable, double prongs for holding product on spits; and a hood for removing vapors.

The unit is said to use 8,000 watts, and the several heat levels permit fast or slow roasting, as desired.

Leonard Freezer Line In 6 to 20-Ft. Models

DETROIT—Dependable performance and a variety of sizes to meet every household need are featured in the new Leonard freezer line, according to Walter Jeffrey, Leonard sales manager. The new line includes 6, 9, 12, and 20-cu. ft. models, said to be the most useful sizes for a wide variety of family requirements.

All four models are heavily insulated with Fiberglas, completely sealed against penetration of outside air and moisture. Exteriors are of rustproofed steel, finished in a durable baked-on white enamel.

Food compartment liners are of aluminum, with square corners to provide direct freezing contact with the bottom and sides of packaged frozen foods. Refrigerant tubing completely surrounds the entire food compartment and lines the bottom of the special fast-freezing section common to all four models, according to the company.

Refrigeration is provided by the Leonard sealed unit. An 11-position temperature control is set at the fac-



The 12-cu. ft. model in the Leonard home freezer line has three steel wire baskets to permit flexibility in food arrangement.

tory for all normal needs, but is readily accessible if a change in setting is desired. Lid-supports are counterbalanced to hold the lid securely and permit easy opening and closing. Steel wire baskets are provided for convenient food arrangement.

Locking devices are featured on all models, including built-in pushbutton locks on the single-lid 6, 9, and 12-cu. ft. sizes, and hasps for padlocks on the double-lid "20."

Model LFL-6, replacing earlier 6-ft. models, will store up to 210 lbs. of packaged frozen foods in a cabinet that is compactly built for smaller families with limited floor space. It features a new, recessed top at counter height which may be used as an extra kitchen work surface. It stands 36 in. high, 39 in. wide, and 23½ in. deep.

The "all-purpose" model LFR-9 will hold more than 310 lbs. of frozen foods in a cabinet that is 34 in. high, 43 in. wide, and 29 in. deep. Model LFR-12, for families with somewhat above average food-storage requirements, holds more than 425 lbs. of home-frozen or commercially frozen foods. Its dimensions are 34 in. high, 54 in. wide, and 29 in. deep.

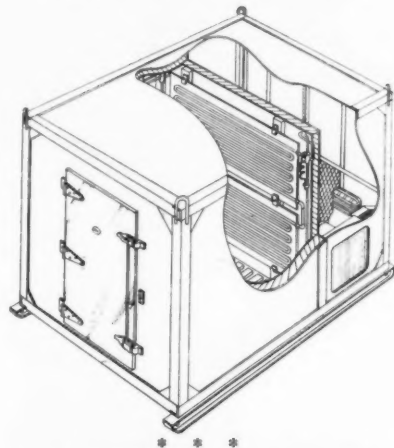
Model LFR-20 will store over 700 lbs. of frozen foods. It is 88 in. wide, but is only a fraction of an inch larger in height and depth than the 9 and 12-cu. ft. sizes. All models, including the "20," were designed to pass easily through doors of average width.

Each model is equipped with a thermometer to check desired temperatures. Available as an accessory is a warning device, operating independently on current from single-cell flashlight batteries, which sounds a buzzer alarm and shows a red flag if the freezer temperature approaches a point which might endanger frozen foods.

Suggested retail prices on the new Leonard freezer line are as follows: Model LFR-9—\$339.95, LFR-12—\$389.95, LFR-20, \$564.95.

These prices include five-year protection plan. No price has been announced as yet on the 6-cu. ft. model.

Portable Reefers Made as Self-Contained Models



PHILADELPHIA—A new line of portable cargo reefers of 150 and 200 cu. ft. capacities has been introduced by the Reco Products Div. of Refrigeration Engineering Corp., 2020 Naudain St. here.

The reefers are welded steel, refrigerated enclosures equipped with self-contained electric or combined gasoline and electric refrigeration units for use in spots where temporary, portable large size refrigerated facilities are required. These include oil field, mining, logging, and construction camps, camps, and hotels.

The cargo reefers are designed for either low temperature or medium temperature storage, the manufacturer said. They are mounted on heavy I beam skids equipped with lifting and towing eyes.

Interior is of 18-gauge galvanized, welded steel. Insulation consists of 6 in. fibre glass on sides and bottom and 8-in. fibre glass on top.

A separate compartment located at the rear of the reefer houses the air-cooled refrigerating system.

Vacuum plate type refrigerating coils are installed on the side walls and ceiling on the inside of the refrigerator. Defrosting is necessary only when 0° F. temperatures are maintained and may be accomplished by scraping or brushing the plates.

Be SAFE and SURE!

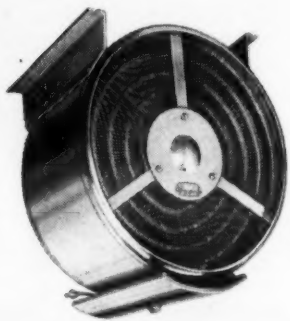
Use PEERLESS

Products... it pays in the long run!

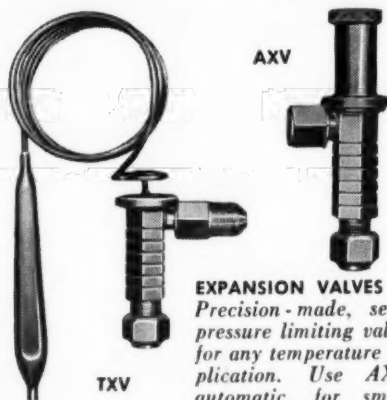
● The dependability of PEERLESS refrigeration equipment gives long life to your installations—pays off in customer satisfaction and increased sales. Every item in the PEERLESS Line, from expansion Valves to Flash Coolers, is expertly engineered from quality materials. You know too that you have the benefit of the latest tried and tested improvements; for PEERLESS always leads the field in new developments which improve performance. Specify PEERLESS for the best in refrigeration equipment.



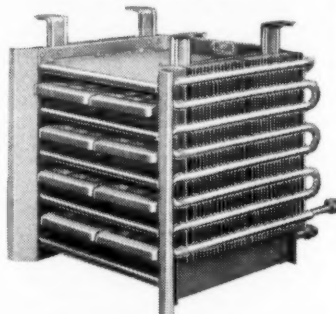
DOME COOLER—The ideal air unit for cooling in reach-in and walk-in coolers. A space-saver!



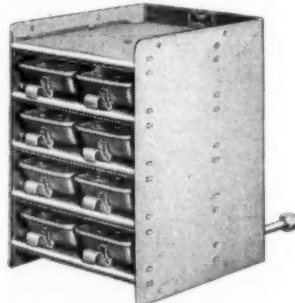
UNIT COOLER—The Unit Cooler with the famous "pie plate" coil. All the surface in the air stream.



EXPANSION VALVES — Precision-made, semi-pressure limiting valves for any temperature application. Use AXV, automatic, for small, single evaporators.



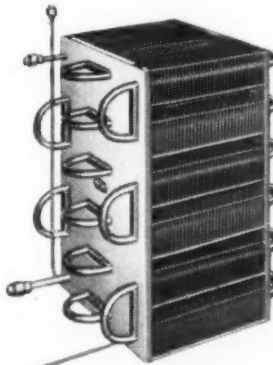
FINNED FASTERFREEZE CUBE MAKER — Combines fin coil surface and cube freezing in a single balanced unit. Many sizes and capacities.



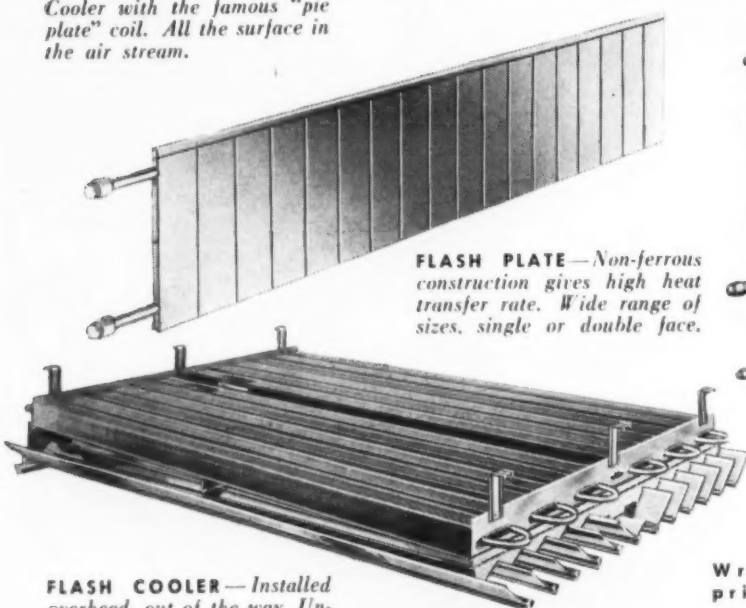
ICE CUBE MAKERS—Snapout—normal—heavy duty models. Top quality, all heavy aluminum, continuous copper tube.



CAPACITY BOOSTER—Another product of superior engineering design. For the correctly designed installation.



FIN COIL—A coil for every application and space requirement with many dollar savings.

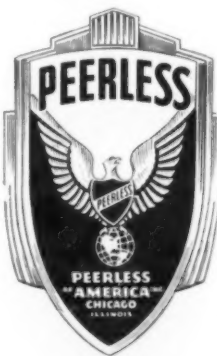


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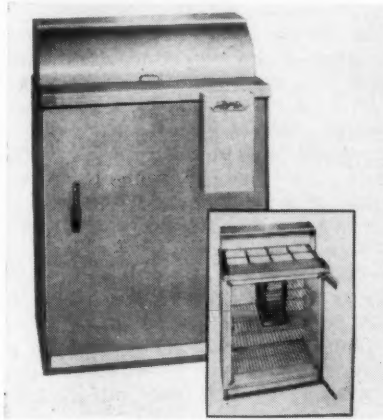


REFRIGERATION and AIR CONDITIONING
General Refrigeration Division

YATES-AMERICAN MACHINE CO., Beloit, Wis.

What's New (Cont.)

Sandwich Unit Features Ice Cube Compartment



PHILADELPHIA—A refrigerated sandwich unit that contains 5 cu. ft. of refrigerated storage space has been introduced by the Fogel Refrigerator Co. here.

The unit features an ice cube freezing compartment that holds six standard-size trays making 144 cubes at a time and a 12-position temperature control with defrost and tray defrost.

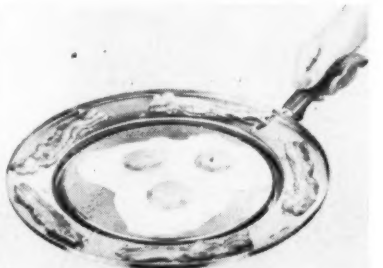
The sandwich unit, called the model SB-5, stands 36 in. high, 27 in. wide, and 27½ in. deep. It has a 1½-in. thick maple work top, a detachable crumb box, and eight 6 by 6 by 3-in. salad pans inset in the work top.

The pans are cooled by conduction from the refrigerated compartment below. A roll-down hood covers the salad pans when they are not in use.

The cabinet is constructed of heavy welded steel, Bonderized, and finished with two coats of high-baked enamel. Refrigeration is by a sealed unit using "Freon-12."

The company said the unit is available for immediate domestic and export shipment. Fogel is located at 5400 Eadom St., Philadelphia 37.

'Bacon-Egger' Ups Frying Speed, Keeps Bacon Hot



FREDERICK, Md.—The Bacon-Egger, a new product that is claimed to fry bacon in half the normal time and keep it hot while eggs are being fried in the same utensil, has been introduced by the Everedy Co. here.

The Bacon-Egger consists of a round flat cooking plate surrounded by a circular apron with handle at-

tached and a perforated cover to fit over the cooking plate.

Here is how the company describes the operation of the unit:

"Slices of bacon are placed on the center or cooking surface. Then the cover plate is placed on top of the bacon. The bacon slices then fry through quickly, making it unnecessary to turn the slices as is ordinarily the case.

"The fat which is rendered goes into the ring-drain surrounding the center. The bacon slices are fried flat in approximately half the normal time. Furthermore, the cover plate prevents hot grease from splattering.

"When the bacon slices are about done, the cover plate is lifted and a fork is used to slide the slices onto the warming and drying apron which surrounds the utensil. Since this apron is hot, the bacon is kept warm and any additional fat that is rendered goes into the ring-drain.

"The center cooking surface has a ¼ in. concavity, sufficient to retain ample bacon drippings in which one to four eggs can be fried while the bacon is kept warm. The eggs may be basted very easily by using a spoon to spread on some of the extra drippings in the ring-drain."

A pouring slot is located on the left side of the unit to facilitate pouring off the excess bacon drippings, the manufacturer added.

The Bacon-Egger was introduced at the National Housewares Show in Atlantic City in July and is expected to be in production immediately after Labor Day. The manufacturer expects to be in national distribution by early October.

The Bacon-Egger will be packed in an individual Manila carton, printed in three colors, which can serve both as a point of sale display and as a gift carton.

Davison To Issue Data On Drying Agent Tests

BALTIMORE—Complete comparative performance data between a drying agent composed of calcium chloride impregnated calcium sulfate and regular commercial grades of PA-100 Davison refrigeration grade silica gel has been prepared by the Davison Chemical Corp. here.

Summarized in concise, easy-to-read form, the data has been assembled into a folder to be released to the refrigeration industry, Davison said. The report compares the two types of drying agents from the standpoints of drying properties, corrosive properties, and dusting properties.

The tests from which the results were obtained were carefully controlled in every phase, the manufacturer said, so that the performance under test conditions would approximate actual field use as closely as possible.

The company believes that the report presents for the first time the facts on the comparable drying abilities of each material.

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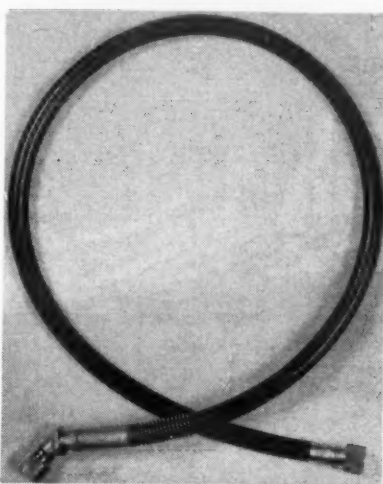
LA CROSSE ICE CUBE MAKER WITH UTILITY HOUSING

By comparison, alone, La Crosse leads the field with their Ice Cube Maker. The final test —PERFORMANCE—puts La Crosse at the head of the list for economy and efficiency in long lasting operation. LARGE PRODUCTION CAPACITY . . . 21 quick release trays—16 cubes each. GREATER STORAGE CAPACITY . . . 1025 cubes plus 336 cubes in trays. UTILITY HOUSING UNIT . . . designed to utilize "lost space" over the compressor—for mixing station, glass storage, sandwich counter, etc. Available with or without Utility Housing.

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Export Representatives: Melvin Pine & Co.
Cable address: Eximport 80 Broad St., New York 4, New York



New Charging Hose Said To Cut Out Kinking

CHICAGO—A new Type "C" angle charging hose with a 45° "E-Z-Flo L-Bo" has been introduced by Fine Products Co., 185 N. Wabash Ave.

With the 45° elbow, the new hose is said to eliminate kinking and to offer less flow resistance and pressure drop.

A 36-in. hose, the Type "C" angle charging hose has a neoprene covering and a neoprene lining which is impervious to refrigerant. Rayon reinforcing provides strength to withstand pressures of approximately 1,000 lbs. p.s.i.

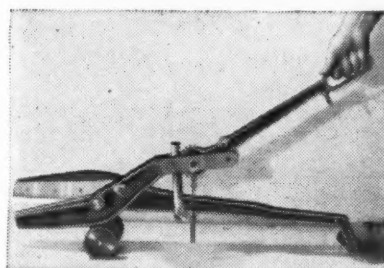
A strong coil spring protects the hose at the elbow. One-piece construction from flare joint to hose eliminates joint leakage, the manufacturer said. The new hose is equipped with "Rapid" couplers which call for only fingertip tightening.

Metal Cutting Shear For Heavy-Duty Work

CHICAGO—A new metal cutting shear for heavy-duty sheet metal cutting is announced by Super Mfg. Corp. here, under the trade name "Super-Shear." The tool cuts steel sheets, rod, and bar stock up to ¼ in. thick and even thicker sections of non-ferrous metals.

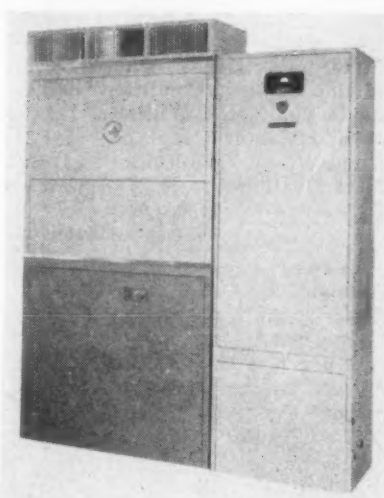
The Supershear employs a combination of compound lever, rack, and gear to multiply tremendously the force exerted on the operating handles.

In cutting larger sheets up to ¼ in. thickness, the shear is placed on the floor, supported by rollers attached to the lower jaw and held in position by a foot pedal. One or



both hands may then be applied to the operating handle. Rack and gear may be disengaged, permitting the device to be used as a straight hand-shear. Lower handle may be placed in a vise for semi-permanent use as a bench shear.

The manufacturer states that a recent test by the Armour Institute of Technology showed this shear capable of cutting ¼ in. thick sheet steel with 60-lb. handle pressure.



Electric Air Filter To Go with 'Package' Units

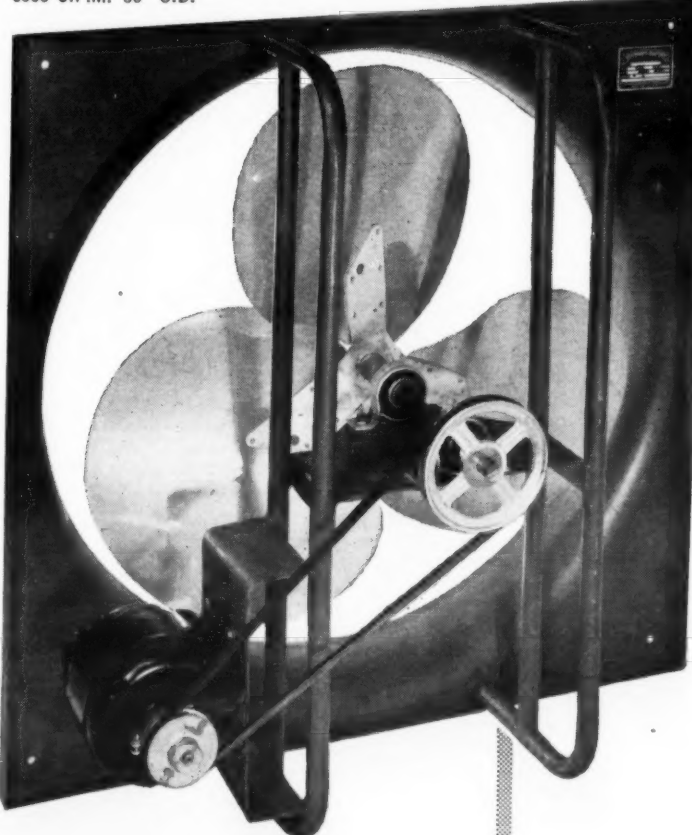
McKEES ROCKS, Pa.—An electric air filter especially designed for use with packaged 3 and 5-ton air conditioners, the Model 904 Trion electric air filter, was shown for the first time at the recent Store Modernization Show in New York City—in conjunction with Chrysler Airtemp packaged air conditioners.

The Trion is designed to take care of air volumes up to 2,000 c.f.m. at 90% efficiency—removing dirt, dust, soot, smoke, and pollen from air stream passed through it before cooling and circulation.

It is claimed that it will more than pay for itself in savings on merchandise soilage, clean displays, lower maintenance costs in cleaning and redecorating, as well as more healthful working conditions.

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BD30CR	½	6900	36"	59.50	119.00
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BD30BS	¼	6300	36"	44.50	89.00
BD30CS	½	6900	36"	64.50	129.00

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MANUFACTURING CO.
WEST BERLIN, N. J.

Chart 1—Air Conditioning Survey

Name: Department Store Location: First Floor
 Outside Summer Condition: D.B. ..95°..F., W.B. ..75°..F., Cooling only
 Inside Summer Condition: D.B. ..80°..F., R.H. ..50% Time of day in use
 Outside Winter Condition: D.B. ..0°..F., 9 a.m. to 5 p.m.
 Inside Winter Condition: D.B.F., R.H.% Time of day peak
 Total Heating Ventilation Only ..Yes... Noon to 4 p.m.

SERVICE INFORMATION

Power
 Voltage ..220...
 Phase ..3...
 Cycle ..60...
 Cost per K.W.H. ..3 cents...
 Present Feeder Capacity ..100 kw...
 Present Feeder Sufficient? ..Yes...
 Is New Service Required? ..No...
Water
 Is City Water Available? ..Yes...
 Temperature of City Water ..80°..F.
 Pressure of City Water ..50...p.s.i.
 Cost of City Water ..20¢/1,000 gals...
 Is New Water Service Required? ..No...
 Is Cooling Tower Required? ..No...
 Is Evaporative Condenser Required? ..No...
 Well Water ..No... Temp.F.

Cooling Load Information

People: Permanent ..20.., Customers ..121.., Av. Length of Occupancy ..1 hr.
 Lights: ..3,000.. watts, Electrical Appliances: ..None...
 Steam Appliances: Steam Table ..None.. sq. ft., Ventilated..., Unventilated...
 Gas Appliances: Coffee Urns ..None.. gallons, Ventilated..., Unventilated...
 Present Exhaust System: CFM..None.., To be Used..., To be Eliminated...
 Protection Against Sun: Windows with, Shades, Awnings...West...
 Venetian Blinds ..East...
 Display Windows: Awnings, Are windows lighted during day? ..No...
 Skylights: No Protection, Shades, Awnings,
 Roof: Is it insulated? ..Yes... Type ..Rigid... Thickness ..1" Inches.

Building Construction

North Wall:12" Brick & ½" Plaster..... North Windows:Door.....
 South Wall:12" Brick & ½" Plaster..... South Windows:None.....
 West Wall:12" Brick & ½" Plaster..... West Windows:Single glass...
 East Wall:12" Brick & ½" Plaster..... East Windows:Single glass...
 Floor:8" Concrete & ½" Plaster..... Ceiling:Over Vestibule...
 Roof:4" Concrete.....

Remarks

Basement temperature in summer assume 95° F.—storage and miscellaneous.
 Store adjacent to south wall is air conditioned.
 Store adjacent to north wall has 12" thick brick wall.
 Steam from Public Service lines—5 lbs. pressure.



by James J. LaSalvia

Readers who have any questions regarding the application of air conditioning are invited to write to Mr. LaSalvia, the author of this series, who will be pleased to furnish a complete and detailed answer free of charge. This is another of the services provided by the NEWS.

Economics (Cont.)

THE SURVEY

The survey (see survey form, Chart 1) is the basis on which the air conditioning system will be based. It is of extreme importance that the correct and proper information is procured. The design, first cost, and cost of operation are dependent entirely upon the survey.

The survey will determine the following results:

- The refrigeration load.
- The design.
- The type of equipment to be used.
- The first cost.

It is necessary to arrive at the lowest and correct refrigeration load to make a very careful survey and to advise the client on certain points which are proper for his installation, which will lead to a low first cost and cost of operation.

In order to make a proper survey, the following factors should be kept in mind:

- Make a thorough investigation of the premises.
- Take actual information.
- Decide with the client in regards to number of people.
- Always check as to whether

there may be a possible increase of people, resulting from installing air conditioning, so that provisions may be made in the design.

e. Be sure to make layout and investigate while on premises possible designs which may go in.

f. Check sun effect on the building, while sun in shining, and be sure it actually exists. Sometimes the space is shaded by adjacent buildings.

g. Fill out survey complete.

h. Decide with client the proposed location of the air conditioning equipment and ductwork.

The survey, Chart 1, shows a typical survey for a department store, of which only the first floor is to be air conditioned. Always make a typical sketch as shown, including plan, and the elevations of the four sides.

The survey was used in Fig. 1 of the section "Cooling Load," for which the refrigeration load is calculated.

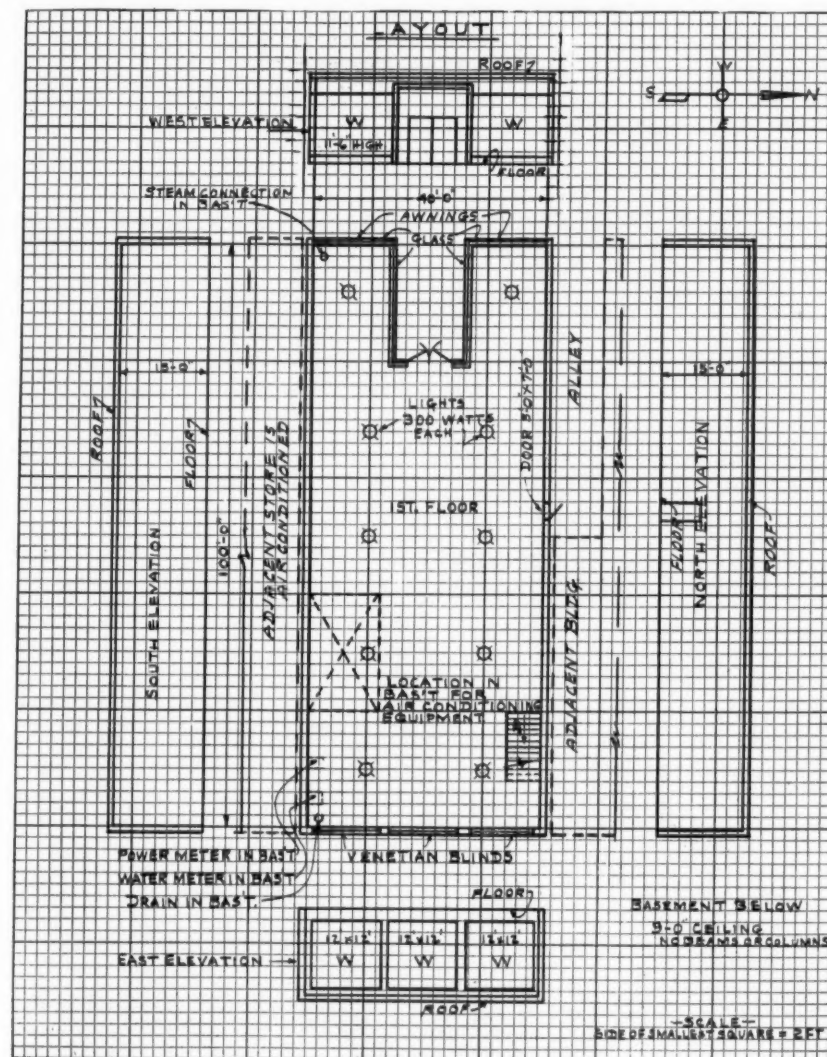
The survey will determine the design of the system, and the type of equipment; such as, self-contained units, remote-type air-handling units, or a central-type built-up system.

The survey will determine the first cost, so it is very important that all factors are known and are correct.

(To Be Continued)

Fig. 1—Various Data Required on Layout for Survey

- Show compass point.
- Note scale of layout.
- Show outline of premises.
- Note and show size of all windows, doors, and stairs.
- Note type of appurtenances at all windows.
- Show or note adjoining structures.
- Show all principal dimensions.
- Show location of all heat giving appliances.
- Show such obstructions: as beams, columns, partitions, and shelves, which may interfere with any duct layout.
- Location of power, water, and drains.
- Show location or possible location of Air Conditioning Equipment.
- Note and show location of any exhaust system hoods over appliances.



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MOTOR CONTROL

'Controlling The Heat Pump'

Excerpts from a Paper In Which Ellenberger of G-E Discusses
Several of the Specific Problems Involved

CHICAGO—Working out a control system for packaged heat pumps designed for application under a wide variety of conditions is no simple matter, according to F. R. Ellenberger of General Electric Co.'s Air Conditioning department.

The numerous problems involved were discussed by Ellenberger at the annual Midwest Power Conference held here by the Illinois Institute of Technology in a paper entitled "Controlling the Heat Pump." Excerpts from his talk follow:

Numerous manufacturers, among which are included the author's company, utility companies, and research groups are actively engaged in this problem. Fig. 1 illustrates a packaged heat pump which is being used to determine some of the operating variables. A number of these units are being installed in various parts of the country for testing under actual operating conditions. . . . Most of the published data available on packaged heat pump installations reveals that problems such as control have not been investigated in very great detail.

Unfortunately, most such installations have simply tested the general adequacy of heat pumps for the particular requirements of each installation and the performance is often estimated simply from electrical consumption (often not including all auxiliaries), degree-day records, and calculated heat loss. This can give an operating efficiency that is considerably higher than actual performance under the specific conditions of use.

Before considering some of the specific heat pump control problems, it should be worthwhile to briefly examine some of the factors upon which control is predicated.

Much has been written about heat sources for the heat pump and many studies are being made of the use of soil, water, and air. One of the

most important aspects besides determining the practicability of each type, is the determination of the temperature and the variation in temperatures that can be expected under conditions of use. The soil is often considered to be a constant temperature heat source; unfortunately, however, this is incorrect as those who have investigated this problem have verified.

Although weather is proverbially the most talked about subject, in reality we have a lot to learn about it in order to properly size heat pumps. In conventional heating systems enough excess capacity is usually available that ample safety factors and rule of thumb methods can be applied. However, in the case of heat pumps, extra heating capacity comes at a premium and it behooves us to determine a little more scientifically just what size unit will properly heat and cool a given space.

Just as was the case when automatic heating was introduced and it became economical to cut down the heat loss by better insulation, so it seems that the use of heat pumps will furnish further incentive for reducing heat loss by better insulation and sealing of buildings.

The statement has been made that the only thing predictable about the weather is its unpredictability. This is not quite the case, the curves on Fig. 2 having been plotted to illustrate this point. Fig. 2 also plots the outdoor dry bulb temperature for Chicago against the average percent of time that each temperature exists as a maximum. This is known as a probability plot and is useful for sizing heat pumps as well as predicting their over-all performance. If the outdoor temperature were due to simply a combination of periodic circumstances then this curve would be a straight line.

Although the year-round probability plot gives us an integrated

picture of average conditions it does not reveal abnormal conditions. An attempt has been made to account for these conditions on Fig. 2 by an additional function plotted as a dotted line. This function indicates the per cent of total time that the outdoor temperature may continuously stay below a given temperature at one time. Thus, this curve is more applicable for all possible conditions that could ever be expected in Chicago.

A word of caution is in order on the use of this curve, since it has been plotted from relatively few points of available weather records. To construct this function with more accuracy, it will be necessary to examine continuous records for a very long period of time.

Fig. 2 illustrates another very useful method for portraying the weather since it accounts for the wet-bulb temperature as well as dry bulb. For a heat pump using air as a source of heat, it is particularly useful to know the amount of moisture in the air.

Analysis of Climates

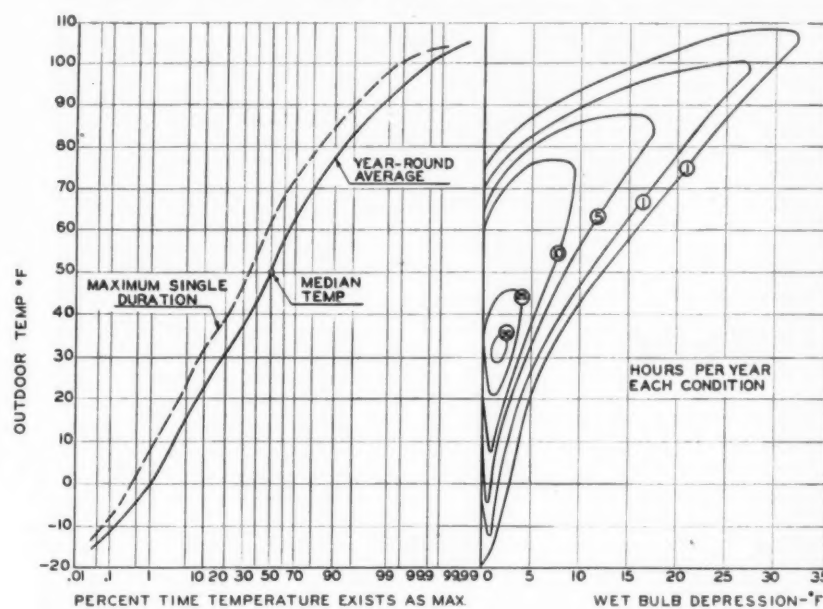
In designing a packaged heat pump for application in many different climates, it is desirable to analyze operation for various climates with the above criteria.

Before considering what controls are needed for a given range of application, it is necessary to give consideration to other application requirements such as heat distribution from the heat pump. Since one of the heat pump's functions is cooling and dehumidifying, it seems that forced air is the most logical vehicle. Since the heat pump works more efficiently at lower temperature differences between heat source and distribution, it is apparent that lower air distribution temperatures than are normally encountered in conventional heating systems will be used. This calls for adequately sized ducts and careful attention to air distribution.

Application in different climates where the ratio between winter heating and summer cooling loads may vary widely may require a variation in air flow quantities between heating and cooling. Placing of outlets near the floor level is not ordinarily satisfactory since during the cooling cycle a cold strata of air will be deposited near the floor.

Once it has been decided what range of requirements that a heat pump will be made to cover and when it has been decided what the basic scheme of operation shall be, then providing the necessary controls for the heat pump follows more or less logically. However, as with any device, consideration of control should not all be left as the last step but should be integrated as much as possible with considerations of the basic circuit and scheme of operation.

Fig. 2—Charting the Weather



These charts illustrate methods of portraying weather probabilities.

Although a heat pump is often described as a reversible cycle refrigeration system, this is somewhat of a misnomer and it would be more correct to call a reversible effect refrigeration system—since the cycle is a pure refrigeration cycle (reversed heat engine); it being only necessary to alternatively utilize the heat absorbed in the evaporator for cooling or that giving off by the condenser for heating.

For the air-to-air heat pump, switchover can be accomplished by switching air circuits such that in winter the evaporator is placed in the indoor air stream and the condenser outdoors, and for cooling; their positions effectively reversed by some sort of damper control. This requires that both indoor and outdoor air flows be the same, and it is difficult to construct dampers that are completely airtight.

Another method of changing from heating to cooling which is frequently used is the switching of refrigerant flow by means of valves so as to interchange the function of the heat exchangers. The simplest way, of course, is to use hand valves and to manually open and close them in proper sequence. Because modern living standards have accustomed us to not doing anything that can be done automatically, consideration is usually given to achieving switchover by the flip of a switch or by the dictates of a thermostat.

Providing automatically operating

valves of the type required is not always an easy problem in view of the reliability that must be attained and the necessity for maintaining a leakproof refrigerant system. The resulting complication is at least partially justified in those seasons of the year where heating and cooling may be required in the same day.

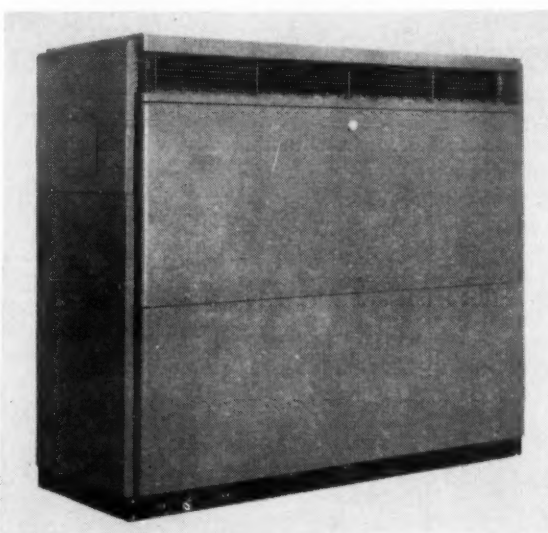
Performance Characteristics

Fig. 3 is presented to illustrate some of the performance characteristics of the heat pump pointing to the need for compressor control. The slanting straight line indicates the heat demand for a building versus outdoor temperature. Even though an indoor temperature of 70° or more may be required for comfort, the demand for heat is usually considered zero above 65° outdoor temperature because of internal heat generated by lights, appliances, and occupants.

Also shown is a typical output characteristic with a fixed displacement compressor driven at constant speed versus temperature of the medium which supplies heat to the evaporator. This capacity characteristic results from the fact that as the temperature of the heat source increases, the temperature of the evaporating refrigerant which extracts this heat also increases and has greater density at higher temperatures. With a fixed displacement compressor, this means that the flow of refrigerant is increased, making heat

(Continued on next page)

Fig. 1—Packaged Heat Pump



This packaged heat pump, produced by G-E, is typical of those being tested in actual use today, and described by F. R. Ellenberger before the Midwest Power Conference in Chicago.

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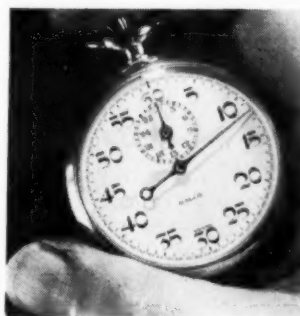


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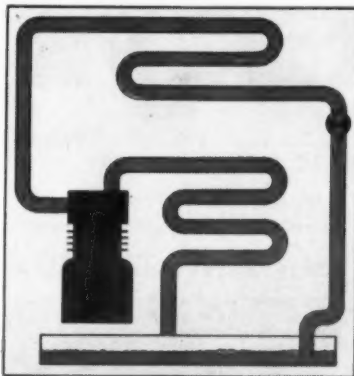


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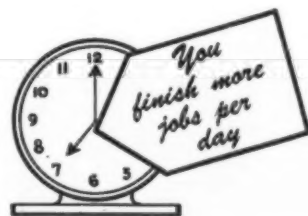
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Methods of Modulating Heat Pump Output By Compressor Control Are Enumerated

(Continued from preceding page)
available to the condenser at a higher rate.

If the outdoor air itself is used as a heat source then the ordinate at any given outdoor temperature gives heat pump output, heat demand and heat pump power for the characteristics portrayed. When heat is taken from outdoor air, moisture is removed in passing through the evaporator causing the evaporator capacity to vary somewhat with the amount of moisture in the air. If air flows are adequate this variation will be small and an average capacity as indicated is accurate enough for rough analyses.

Rating Point

The point at which the heating demand line equals the heat output resulting from the heat source temperature that exists, is called the rating point and indicates the lowest outdoor temperature at which such a heat pump will deliver an amount of heat to continuously maintain the desired indoor temperature under steady state conditions.

Comparison of heating demand and heating output indicates, then, that some sort of modulation or reduction in capacity is necessary to match the heating demand requirements. For example, for the particular characteristic illustrated, when the outdoor temperature gets as low as 15°, the heat pump would have to run 100% of the time to maintain the desired inside temperature.

At an outside temperature of 32° the demand could be satisfied by operation 50% of the time since the output at this point is about twice that required. At 56°, the heat pump would be required to operate only 10% of the time. As one would guess, this would cause short cycling, and since the heat pump normally has little thermal storage, would result in undesirable heat distribution characteristics.

There are means of modulating the capacity of heat pumps other than off-on cycling and an examination of the power consumption curve on Fig. 3 reveals one need for them. For the example shown, the power requirements at a heat source temperature of 65° is 28% higher than

that if the heat source drops to 15°. This brings out another need for compressor modulation. If our motor were sized so as to be completely loaded under the 65° condition, then it would only be driving the compressor under only 3/4 load when the source temperature drops to 15°. Moreover, there is the possibility that it will become overloaded during the cooling cycle as the temperature of the medium to which condenser heat is dissipated, rises.

Modulating the output of the heat pump by compressor control is very desirable from the standpoint of maintaining the highest possible electrical load factor (average power demand/maximum power demand). If the heating requirements are met by simple on-off cycling, then the maximum power demand will occur at light heating requirement.

From Fig. 3, the maximum power demand for an unmodulated heat pump occurring at 65° source temperature, is given at 128% of the power required at the rating point. Such a heat pump, then, would have a load factor for heating of $1 \div 1.28 = 78.2\%$ "relative" load factor as compared to the heating load factor that would be attained if the maximum electrical demand occurred simultaneously with the maximum requirement for heat.

Suppose, however, that the compressor is modulated in such a manner that, above outdoor temperatures of 32° F., capacity output and total power required is reduced to one-half (coefficient of performance remains the same). Maximum power demand would then occur at this point and would be equivalent to 114%. Relative load factor would then be 87.8%. Similarly, as the number of steps of modulation is increased, so will the load factor:

Steps of modulation	Relative load factor—%
1 (unmodulated)	78
2	88
3	93
4	95
00	100

Some of the modulation methods that can be used in an attempt to overcome these disadvantages are:

1. Multiple compressors.
2. Multiple motors or multi-speed motors.
3. Variable speed transmissions.
4. Cylinder by-pass.
5. Special compressors.

Each of these methods introduces special problems in complexity, control, cost, and reliability. Only the significant features of each will be outlined here.

If multiple compressors driven from a single motor are used, some means must be provided to engage and disengage individual compressor units so as to give the desired displacement for different operating conditions. It is necessary to provide enough total displacement for the lowest expected temperature, i.e., the rating point, but this displacement will be used only a small percent of the time, and for most of the season only a fraction of the compressor units will be called upon.

Using Single Compressor

It is possible to approximate the requirements by using a single compressor unit by a special multi-speed motor or a combination of motors. Here again, compressor size must be based on the rating temperature which rarely occurs, and the many combinations of motor speed and motor power possible all tend to be costly and each adds attendant complexities of control. Variable speed transmissions also add complexity and may impose additional power losses.

The use of cylinder by-pass in which it is possible to cause some of the compressor cylinders to pump back to the suction line is roughly equivalent to the use of multiple compressors, although the losses are a different nature. Losses due to gas friction, gas heating, and mechanical friction are not eliminated. The complexity and cost here is proportional to the number of cylinders which must be by-passed.

Any one or a combination of the aforementioned methods can be specifically designed into special compressors. The solution of the problem in this manner should probably be the most efficient means but would require a sufficient production quantity to justify the special compressor. Considering special compressors of this nature, additional means are also available for modulation. Two of these are suction valve control and clearance volume control.

Another heat pump control problem which is tied in closely with compressor modulation is that of motor starting. It is desirable to have an unloader so that high starting torque motors are not required and to cut down the duration of the starting current surge so as to not cause excessive voltage variation and resulting light flicker.

Demand for Cooling

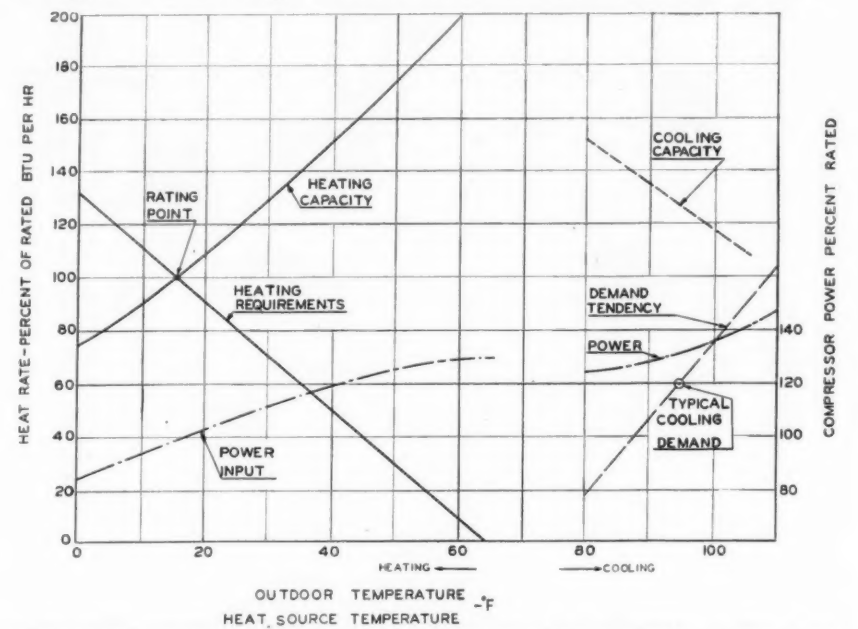
Examination of the right-hand side of Fig. 3 illustrates that the demand for cooling capacity may not be as great as that for heating. This would certainly be true for residential applications in the Chicago area. The cooling demand here is shown as a single point, although both it and the capacity of the heat pump as a cooling machine vary not only with outdoor dry bulb temperature, but also with humidity conditions.

Cooling is somewhat less critical than heating, since occupants would be less unhappy about any capacity deficiency at abnormally high loads than they would be with lack of sufficient capacity during the heating cycle at extremely low outdoor temperatures. If air is used as the medium for dissipating condenser heat during cooling, then, as the outdoor air temperature rises, so will the power requirements. Means for preventing compressor motor overload under these conditions become important. A smaller capacity than desired at permissible motor loading is preferable to having the unit drop out of operation due to excessive motor loads.

In heat pumps, as in any other type of refrigeration system, it is necessary to provide means for throttling the high pressure condensed liquid to the low side of the system. Means that can be used include thermostatically controlled valves, hand valves, and float valves. The type of control to be used is largely a function of the type of evaporator used.

The only significant requirement insofar as heat pumps are concerned is only that, since the heat source may not always be at the same temperature, whatever control is used it should operate over the range encountered at high evaporator effi-

Fig. 3—Performance Characteristics



This chart presents some of the performance characteristics of the heat pump which point to the need for compressor control.

ciency. A vapor-control thermostatic expansion valve, for example, tends to hold greater superheats at low evaporator temperatures.

Since low evaporator temperatures in heat pumps may occur simultaneously with the greatest need for heat, increased superheat at low temperature operation reduces the surface of the evaporator available for operation, reducing its capacity when its capacity is most needed.

Controlling Refrigerant

Controlling the refrigerant flow, besides being necessary for proper refrigeration, is also useful for controlling compressor power. At conditions where the compressor motor may overload, this may be prevented by throttling the refrigerant flow between the high side and the low side more than that required for the best evaporator performance. When the compressor power is reduced in this manner it is done so with a reduction in coefficient of performance and in addition, the artificially low evaporator temperature resulting may provoke frosting.

The use of a refrigerant circuit calls for additional forms of control. It is customary to provide pressure-actuated switches to stop operation under abnormal conditions of either high or low refrigerant pressures. Switches operated by refrigerant pressure may also be used for other control functions. For example, on a modulated compressor system, a suction pressure switch can be used to initiate increased compressor displacement.

When air is used as a source of heat for the heat pump, one of the big problems to be overcome is that of frost formation on the evaporator coil. This problem is quite basic to such a heat pump, and before discussing the resulting control problems, it will be useful to gain a better understanding of its cause and effects.

The statement is often arbitrarily made that air is an impracticable heat source since when the evaporator surface temperature is below freezing, frost is deposited on the evaporator surface, rendering it inoperative below this temperature. This is not absolutely true since, unlike water, some heat can be removed from air

no matter how low its temperature. The problem then is twofold; first to cut down the rate of frost formation and second, to remove frost accumulation before it is built up to the extent that heat transfer is substantially affected.

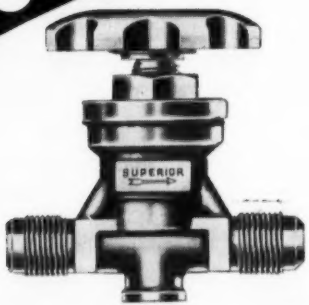
Tests and experience have shown that depositing of frost occurs most rapidly between 25° F. and 45° F. When the air temperature is above 45° F. heat can be removed from it by an effective evaporator coil with a surface temperature above 32° F. Below 25° F. the air normally contains so little moisture that frost buildup, if it occurs, is at a slow rate. Also, it has been observed that as air conditions undergo natural climatic change, frost may often remove itself before a harmful amount of accumulation has been formed. In addition, frost may sublime to some extent during the off cycle.

Some definite advances have been made in retarding the rate of frost formation. A fundamental principle is that the effectiveness of the outdoor air evaporator should be as high as possible so as to not only provide the highest possible refrigerant temperature for cycle efficiency, but also to achieve a low proportion of latent heat removal.

In the extreme, if we had a very large heat exchanger, the refrigerant could be evaporated at a temperature

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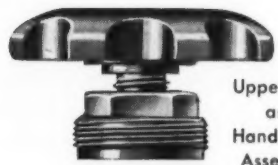
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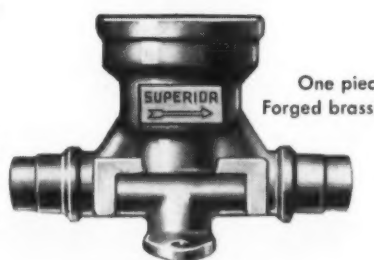
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Simple On-Off Type of Thermostat Doesn't Provide Adequate Control for Heat Pump

(Concluded from preceding page)

very nearly that of the outdoor air, and most of the heat thus absorbed would be by sensible heat removal and there would be little condensation of the water vapor in the air with little, if any, resulting frost.

One of the obvious ways to retard frost buildup, or to eliminate it entirely is to remove moisture from the air before it passes over the evaporator. This can be done with a chemical drying agent but this requires additional equipment and also requires that the chemical be replaced or that energy be supplied to drive off its absorbed moisture, whether or not this moisture would otherwise have been deposited as frost on the evaporator.

Another method that has been used to prevent frost formation is to continuously flood the outside of the evaporator surface with a low freezing temperature substance. Here again, the material must be replaced or re-concentrated.

Two Forms of Frost

Although frozen water and water vapor have been with us for a long time, it has only been recently that they have been studied with a view to finding out the detailed physical properties involved. It has been found, for example, that when air is passed over a surface that is below the freezing temperature, frost may be deposited on the surface in one or both of two forms. These are rime frost and crystalline frost.

When water vapor in air is cooled as it approaches a cold surface, it condenses out as small water droplets. Even with temperatures below freezing they remain in the form of supercooled water. If these droplets are allowed to strike the cold surface they freeze and adhere very rigidly as rime. Aerodynamic considerations will determine whether they are deposited on the surface or pass on through the heat exchanger.

Crystalline type of formation occurs where water passes directly from vapor to solid form. Vapor pressure differences between the surface and the air stream cause this migration and little can be done to prevent it. However, there are indications that frost in this form has varying affinities for different types of surfaces, and it may be possible to control it by the proper surface treatment.

One of the simpler ways that have been found to retard the formation of frost is to maintain a relatively high air velocity through the evaporator. This is the result of two phenomena:

1. When the rime type of frost is deposited on the leading edges of the evaporator surface, it tends to build out into the air stream in the form of small tentacles and if the air velocity is high enough it will break them off and carry them away.

2. High velocities will also carry many of the supercooled water droplets through the spaces between the heat exchanger tubes and prevent them from becoming attached. Consequently, the amount of frost that

is actually collected under such conditions may be considerably less than that indicated by psychrometric conditions.

Once frost has been deposited to any extent on the evaporator surface, consideration must be given to its detection and removal. If the evaporator is of deep, multi-row construction, frost may form on part of the coil only. For example, the dew-point of the air may not be reached until it has passed partially through the coil, and frost under this condition may form on the downstream side only.

Under different conditions it may form predominately on the upstream side. One of the more useful indications that have been successfully used for detecting frost is the change of air pressure difference upstream and downstream from the coil.

Frost can be removed by the application of heat either to the frost itself or to the inside of the evaporator tubes. In the former category are included the use of hot air, electric heat, steam, and water spray. Heat may be applied from the inside by direct electric heat but perhaps more conveniently by the condensation of warm refrigerant vapor. Applying heat from the inside has the advantage that most of the heat required goes into melting the frost and very little is wasted to the surroundings.

Other Defrosting Methods

In at least one type of heat pump this heat is obtained from indoor air and the defrosting cycle is simply a cooling operation, except that the outdoor air fan is not operated. This has the obvious disadvantage of blowing cold air into the heated space. If the heat pump has additional evaporators, then it can obtain heat from some other source such as water or the soil, and pumped from this source into the frosted coil. Another possibility is to store heat by some means so as to be available for quick defrosting.

When frost is removed by some such method, it is important to determine at what point defrosting should be stopped. If defrosting is effected by discharging refrigerant gas into the evaporator coil, some of the frost may be removed rather quickly while defrosting other portions may require a much longer time. If an attempt is made to remove all the frost under these conditions, heat will be wasted through convection and radiation from the portion of the coil that is bare and the bare surface may rise to such a temperature that the discharge pressure from the compressor becomes too high.

Investigations that have been made to determine the optimum amount of defrosting indicate the following:

1. A small amount of frost formation does not interfere with proper operation of the evaporator coil.

2. Defrosting is accomplished proportionately more rapidly with smaller accumulations than with larger accumulations.

3. It is not economical to attempt to remove all deposited frost because of the disproportionately greater amounts of energy required as defrosting proceeds.

4. Results of the above, as well as consideration of the time that heating is interrupted, lead to the conclusion that the evaporator coil should be defrosted before the buildup reaches the point where heat transfer is seriously affected.

Problem of Control

The problem of providing a thermostat for automatically controlling heat pump operation is usually not answered by a simple on-off type of thermostat as would be adequate for a conventional heating or cooling system. If the heat pump is not modulated in any way and simply has one condition of heating and one of cooling, then one of the currently available double-contact thermostats may be used.

However, if the heat pump is designed to overcome some of the control and performance difficulties that have been presented here, then some type of a modulating thermostat control must be provided. The type that controls a modulating motor whose shaft position is made to vary with room temperature can be used to control the different heat pump functions by means of a sequence of contacts.

The same effect can be achieved, and the control motor can be eliminated, by providing the thermostat with a sufficient number of delicate contacts.

Each of these types does not eliminate a control "droop" since, with a given thermostat setting, the conditioned space must be at a lower temperature to call for increased

amounts of heating capacity. Attempts have been made to develop thermostats with a self-compensating feature to eliminate this difficulty.

A combination indoor-outdoor thermostat system can be made to provide modulated control by using the outdoor thermostat to control the degree of modulation and indoor thermostat the on-off function. However, when the thermostat setting is raised to a higher temperature setting, the capacity may be handicapped by inability of the control combination to call for maximum heating capacity.

Another difficulty that must be overcome in a heat pump thermostat is the possibility of a call for cooling in the winter and a call for heating in the summer when the thermostat setting is changed. Typically, such a thermostat is arranged to call for heating, for example, at 70°, and for cooling at 76°, and when the room temperature is between these two points there will be no heat pump operation. Suppose, however, that the thermostat setting is changed to 60° for some reason. If the thermostat is constructed such that the dead band remains at 6°, then the unit will start up on cooling operations—which is apt to be rather undesirable in the middle of winter.

Considering these things, it is apparent that much work remains to be done on thermostatic control systems in order to provide an effective and simple control to suit the peculiar requirements of a heat pump.

Discussion of electrical control has been left to last since, once the other problems that have been discussed thus far have been solved and the general scheme of control operation decided upon, then the electrical control elements can be specified in a straightforward manner.

Control Assembly Described

Fig. 4 is presented to illustrate an assembly of electrical heat pump controls. Among the functions these controls accomplish are included the following:

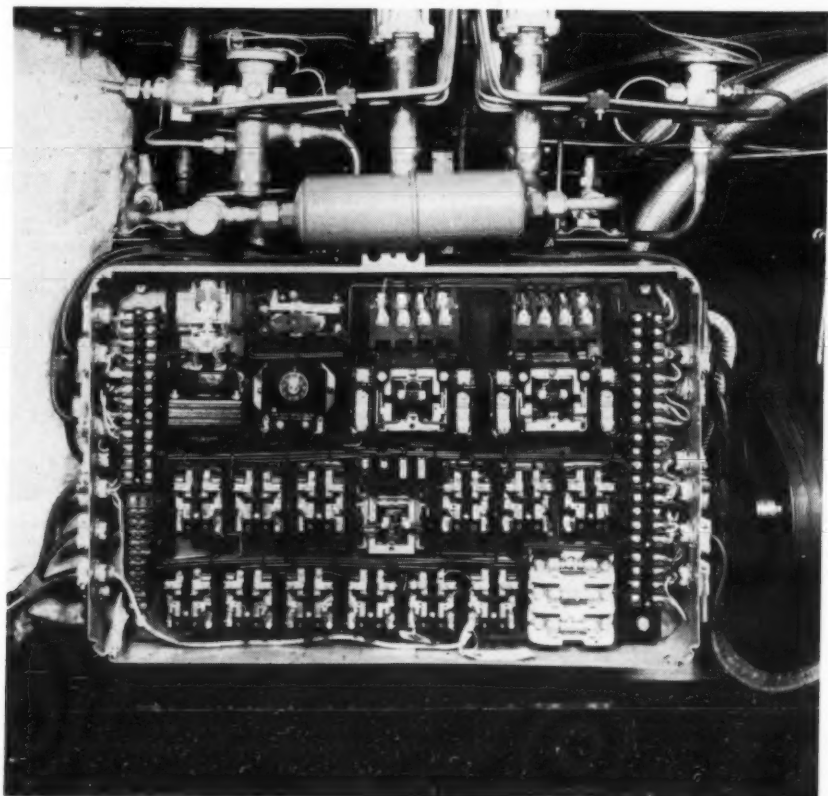
1. Automatic heating or cooling operation.
2. Translation of thermostat signals into power to energize the appropriate motors and relays.
3. Ventilation.
4. Modulation.
5. Automatic defrosting.
6. Sequential motor starting.
7. Interlocking of various functions for safety of operation.
8. Motor overload protection.
9. Motor undervoltage protection.
10. Circuit fusing.
11. Low voltage supply for thermostat.

12. Localization of all electrical connections on centralized terminals.

These particular controls are constructed largely from standard control components and are arranged to control a heat pump under a wide range of application conditions. Controls for a more specific range of application would be somewhat simpler, and, were new types of controls elements to be designed for requirements peculiar to heat pumps, then a further simplification would be possible.

Specifying electrical controls for a heat pump is little different in principle from specifying them for any other device. The primary control element, in this case the thermostat, must actuate the necessary relays and other control elements in order to operate such things as compressor motors and fans in the proper sequence. Safety features to prevent equipment damage in case of failure or misuse must be observed.

Fig. 4—Heat Pump Control Assembly



This photograph illustrates an assembly of electrical heat pump controls.

TOPS

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The outstanding development
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The standard of the industry
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Write for Bulletin R-124

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CONDENSERS Air Cooled, Water Cooled, Evaporative - WATER COOLING EVAPORATORS - BLAST COOLING COILS - BLAST HEATING COILS.

Every One in the Industry
Should READ...

ONE FOOT in THE DOOR

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"One Foot in the Door" is the laugh-and-fact-packed story of Specialty Selling. It takes you back through chuckling pages to the birth of the specialty merchandising art under John H. Patterson of N.C.R. fame, and it takes you forward—again with smiles and guffaws—to the shining future.

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CHAPTER TITLES from "One Foot in the Door"

1. "This Is a Funny Book"
2. The Old Master—and How He Got That Way
3. Making Direct-Mail Advertising Respectable
4. Hair Grows on a Billiard Ball
5. Publicity Isn't Always Free
6. People See Better Than They Hear
7. How to Humanize Your Company
8. Tom Thumb Cartels
9. Finding the Rainbow's Pot-of-Gold
10. There's Always One Best Way to Tell Your Story
11. You Can't Get Off First Base Without a Sales Manual
12. "It Pays for Itself"
13. Ask the Man Who Uses One
14. Everybody Loves a Convention
15. Sales Training Schools Must Be Clever and Entertaining
16. Circuit Riding Becomes a Profession
17. Make It Clear, Make It Simple, Make It Direct
18. Just a Minute, Dear
19. Five Will Get You Ten
20. Mama Can Help, Too
21. Ask the Man Who Does the Work
22. Factory Open House Policy
23. Who Says You Can't Sell Abroad?
24. "Tell All" Promotion Rings the Bell

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8-15-49

Public Seeks Quality, Not Price Cuts

George's Finds Shoddy Products Makes Selling of Better Appliances Hard

By George M. Hanning

KALAMAZOO, Mich.—The trouble with the appliance business today is right in the product. Prices are too high for the quality of merchandise that is being put out by the manufacturers.

That is the unqualified and indignant opinion of George Miyagawa, owner of George's Radio and Appliance Co., 494 W. Michigan Ave. here. Miyagawa has been in the appliance business, sales and service, for about 23 years, 13 of them in this same location. Therefore, he feels he knows whereof he speaks.

"In 1946, 1947, and 1948 the people were anxious to buy and were not too particular about quality. If you had it, they would take it. They didn't ask questions. That's not true today.

"They are still willing to pay a good price for the appliance they want, but they demand a product that will give them service. And they are not getting it.

"Too much of what the manufacturers are turning out is just plain junk. And that applies right across the board, not only with appliances, but with everything. Even the best brands are affected.

MUST COMBAT PREJUDICE

"The dealer today is not getting enough margin to permit him to overhaul the appliances when he gets them and then overhaul them again after he sells them. He can't afford to do it. But what can he do?

"Now the dealer has to combat the prejudice that people have built up against faulty equipment they purchased in 1946 and 1947.

"For instance, I have an automatic washer here that I know is a good machine. A woman—an old customer—came into my store the other day looking around for a washer. Her spinner type washer had broken down and she needed one badly.

Tired of Getting Gyped, People Will Pay Price If Convinced They Are Given Quality

KALAMAZOO, Mich.—"People are tired of getting gyped. They will pay a good price for a refrigerator or other appliance if they are convinced they are getting quality."

Bryant Kistler of Kistler's Appliance Store at 143 Rose St. here is quite sure that this statement holds true though he hasn't been in the business very long.

The fledgling firm was started only about a year ago by Bryant's father, Guy, and is operated by these two and Bryant's brother David. They took over the former Stanwood's Appliance Store at the same address.

To back up this policy, Kistler's handles only what it considers to be quality lines of appliances, heating equipment, water conditioners, and Venetian awnings. And it sells its lines at full list price and finds a ready market for them.

"It doesn't pay to cut prices," Bryant Kistler declared. "The first thing the customer asks is 'What's wrong with it?' They don't want a piece of junk."

Kistler's is just feeling its way along, Bryant asserted, and taking things slowly. It can't afford big promotions, extra salesmen, and such

things yet. It even hires out is service to an independent serviceman on an hourly rate basis.

But the firm feels that it is selling its share of merchandise and at a profit. Only about 25 or 30% of its business is done on time. These accounts are handled through bank contracts—any bank the customer prefers.

Most people still prefer to pay cash, the store finds. Bryant cited a recent instance where an old woman from a poor neighborhood came into the store, pointed to an 11-cu. ft. Admiral refrigerator and said that she would take it. What's more, she slapped \$444 down on the line to pay for it.

"She told us that she had been saving up a long time for that refrigerator," Bryant related.

Bryant reported that the store has been able to sell all the trade-ins it has received so far by advertising in the classified sections of the newspaper. Close proximity to lake resort areas has been helpful in moving them, he believes.

"We try to make a profit on our trade-ins, but we are willing to take a loss to get rid of them," he commented.

The two exclusive interviews printed on this page reflect the feeling of some dealers that better merchandise from the manufacturers is what the public wants these days. Speaking from their own day-to-day contact with the housewife on the street, these dealers—one old and one new—say that cut prices make shoppers suspicious that the appliance will not give the service they have a right to expect.

"I had to beg her—actually beg her—to let me put this machine in her home for a demonstration. Her sister had bought one of that brand a few years ago and it would not wash the clothes clean.

"I argued that if she would only give me a chance, I would show her that this washer would clean her clothes satisfactorily. She finally agreed to let me install it in her home and to give it a trial. But she warned me in advance that she would not buy it.

"I had the machine installed at considerable expense to myself and sent a home economist out to the woman's home to make the demonstration and show her that the machine would do what I said it would do.

HOME DEMONSTRATION SELLS

"The demonstration was a success. Then the woman tried it herself just to prove that she could do it. When it came time to take the machine out of her home, she decided that she wanted to keep it.

"She went to work on her husband, so that when I came to see him to close the sale, he was already convinced. He bought it at full list price and it was the top model in the line."

"When one person gets a bad unit, that isn't so serious," Miyagawa commented sadly, marking a figure one on the back of an envelope.

"But when two persons get bad products," he added, marking another figure one beside the first, "then 11 people hear about it.

"And when three people get faulty appliances," he shook his head while marking down a third one, "111 people hear about it. That's bad."

"What can the dealer do?" he asked. "We don't make enough margin to overhaul all the units that are shipped to us. And we have to pay the freight both ways when sending it back to the factory for repair.

"It is better to sell the faulty merchandise at cost rather than take a loss on repairing it."

CUT PRICE OFFERING SPURNED

But price cutting is no good, Miyagawa has found to his own sorrow. "I tried advertising price once," he related. "Yes, the people come in. But they look over the merchandise. They don't say anything. They just walk out and go down the street and make a better deal with some other dealer.

"When you cut price, the question is always in the customer's mind: 'What's wrong with it?'

"Even when we explain that the appliance is just a floor model, or scratched a little, they still think that something is wrong with it. And they won't buy.

"Manufacturers are cutting prices today and the customers are asking 'What's wrong with it?'

"I think that the manufacturer who cuts quality to make a lower price for his product is cutting off his nose. The people today demand serviceability for the price they pay."

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Standard equipment with most
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Sold By All Better Jobbers

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COMMERCIAL

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Curtis Refrigerating Machine Division
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COMFORT COOLER

No ducts required
360° circulation
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20,750 BTU. hr. at 40° Ref. Temp.
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World's Largest Manufacturers of Refrigeration Controls

... more than 20,000,000 controls now in use

CRMA Meeting--

(Concluded from Page 1, Column 2) to be satisfactory. With constantly narrowing margins, no change in the industry's price levels is contemplated, it was indicated.

A series of panel discussions on Labor Relations, the Sales Outlook, Distribution Problems, and Management featured the program. In discussing the sales outlook, L. O. Bower, vice president of Sherer-Gillett Co., declared:

"The principal objective of manufacturers' sales departments today is to encourage dealers and their salesmen to contact more potential customers than ever before, and ask them to buy."

Other speakers on the panel agreed that more effective salesmanship was the primary goal of this and all other businesses, plus more confidence in overcoming buyer resistance caused by "economic double-talk" and fear psychology.

Other executives leading panel discussions were Robert L. Tyler, Tyler Fixture Corp.; William Fogel, Fogel Refrigerator Co.; E. L. Stultz, Viking Refrigerators, Inc.; John D. Harris, The Warren Co.; Raymond H. Starr, Koch Refrigerators, Inc.; A. L. Johnson, Puffer-Hubbard Mfg. Co.; Herman C. Ahrens, The C. Schmidt Co.; William B. McMillan, Hussmann Refrigerator Co.; and R. J. Rehwinkel, McCray Refrigerator Co.

John J. Leonard, of Seeger Refrigerator Co., was re-elected president of the association for a second term. A. J. Maas, of C. L. Percival Co., was elected vice president, and Edward N. Northey, of Herrick Refrigerator Co., treasurer. Robert L. Tyler of Tyler Fixture Corp., and William J. Stelpflug, of Hussmann Refrigerator Co., were elected to posts on the executive committee.

More Accounts Past Due, Fewer Take Cash Discount

NEW YORK CITY—The average percentage of past-due accounts of manufacturers and wholesalers covered by a recent survey has increased from 5.5% a year ago to 7.5% today.

The survey was conducted by the Credit Research Foundation, an affiliate of the National Association of Credit Men. It also turned up these other findings:

Many accounts are being turned over for collection sooner than was the case three months ago.

The number of new accounts becoming past-due is on the increase. This is blamed primarily on the change from a sellers' to a buyers' market, competition, the inexperience of management in handling postwar finances, and the increased cost of doing business.

The number of accounts on a cash discount basis has declined 10% from a year ago.

The number of new businesses has decreased steadily and the number of discontinued businesses has increased steadily in the 1946-48 period.

Arvin Offers Dealers 40% Off on Quantity Purchases

CHICAGO—Gordon T. Ritter, director of Arvin Sales Div., Noblitt-Sparks Industries, has announced that all Arvin electrical appliances will be subject to a dealer discount of 40% off list when purchased in master carton quantities.

Prior to the announcement, the discounts on the company's line of small appliances has averaged 33%, though varying on particular items.

Ritter said the move was made to assist dealers in meeting the increasing costs of operation. It involves no decrease in distributor discounts.

Refrigerator, Air Conditioning Excise Tax Collections Rise

WASHINGTON, D. C.—Compared with the same month a year ago, collections of manufacturers' excise taxes on mechanical refrigerators, air conditioners, etc., in June were up \$185,458 but those on electric, gas, and oil appliances down \$2,401,654, according to the Bureau of Internal Revenue.

June collections on refrigerators, air conditioners, and the like totaled \$5,518,485, against \$5,333,027 in June last year. A total of \$5,125,532 was collected on appliances in June, compared with \$7,527,187 in the corresponding period of 1948.

A & P Establishes First Self-Serve Fish Dept. As Blueprint for Chain

ROCHESTER, N. Y.—A & P has begun an experiment here with a self-service fish department and, if successful, may extend the idea to markets across the country.

The new self-service fish department has been set up in the store's remodeled and expanded supermarket at 1835 Monroe Ave.

It is operated on much the same principle as the self-service meat department, with fish individually weighed, identified, and priced in open refrigerated cases where they may be inspected and selected by customers without the aid of clerks.

George Willis, Rochester area A & P supervisor, said the self-service fish department is the first to be established by A & P anywhere and if it works out well will serve as a blueprint for others across the country.

The remodeled A & P market also features the firm's first self-service meat department in the Rochester area. In fact, the entire store is 100% self-service.

About 4,000 sq. ft. of floor space has been added to the store under the expansion program.

York-Detroit Corp. Formed To Serve S. E. Michigan

DETROIT—The newly-formed York-Detroit Corp. has announced its appointment as distributor in this area of the air conditioning and refrigeration equipment manufactured by York Corp.

The new company, located at 14385 Wyoming Ave., succeeds Talbert-Thomas Co. of Michigan as a York distributor.

In addition to the Detroit area, York-Detroit will serve 14 surrounding counties. Cities in the territory include Jackson, Ann Arbor, Lansing, Pontiac, Flint, Port Huron, Mt. Clemens, and the downriver area to and including Trenton.

Officers of the company are Carl F. Clarke, president; William J. Brinkmann, vice president and general manager; Frank A. Morrison, treasurer; and George L. Cassidy, secretary.

Clarke was formerly president of Monroe Steel Castings Co. In the air conditioning and refrigeration business since 1924, Brinkmann represented York in Detroit from 1939 to 1941, was with the local Chrysler Airtemp distributor from 1945 to 1947, and was with the local Carrier distributor from 1947 until early this year.

Morrison is president of Corporate Service, Inc. here. Cassidy is a local attorney.

Engineering, installation, service, and warehousing services will be maintained by York-Detroit.

Ralph Hansen, who has been a supervisor and field engineer for Talbert-Thomas since 1945, has been named service manager. Hansen's other experience in the field includes seven years with Absopure Refrigeration Corp., Detroit, and 14 years with Universal Cooler in service and engineering.

Among other members of the organization are three sales engineers also formerly associated with Talbert-Thomas. They are Frank O'Brien, Harry Vollis, and George Ball. In addition, there are six "package" salesmen who will handle frozen food cabinets, "FlakIce" machines, automatic ice cube makers, and room air conditioners.

Brinkmann said the company, which is owned by 20 Detroiters, will keep samples of its equipment in operation on the showroom floor, including an automatic ice cube maker and a "FlakIce" machine. Packaged air conditioners equipped with heating coils will cool and heat the quarters.

Ammonia equipment up to 5 by 5 will also be handled by the concern.

Mills Issues Catalog

CHICAGO—A completely new 60-page Catalog 204-1 illustrating the full line of Mills compressors and condensing units has just been issued by Mills Industries, Inc., 4100 W. Fullerton Ave., Chicago 39.

These models include air cooled $\frac{1}{4}$ to 3 hp., water cooled $\frac{1}{4}$ to 10 hp., and combination air and water cooled $\frac{1}{2}$ to 3 hp.

McQuay Buys New Plant To Produce Ice Maker

FARIBAULT, Minn.—R. J. Resch, president of McQuay, Inc. has announced the purchase of a 32,000-sq. ft. factory here from Argus, Inc. for approximately \$100,000.

Resch declared that McQuay would make a new automatic ice machine in the plant, with operations to begin sometime in October. He added that the firm would invest from \$100,000 to \$150,000 in machinery and equipment for the plant and an equal amount in inventory.

About 25 to 50 persons are expected to be employed at first with the payroll to include 150 to 200 persons eventually, he asserted.

Air Conditioned Storage Room Preserves Seeds

PALMETTO, Fla.—Slaughter & Taylor have just completed installation of a refrigerated and air conditioned seed storage room at the firm's farm supply store on Eighth Ave.

"Installation of refrigerating and air conditioning equipment in our seed storage room enables us to keep seeds in perfect condition at all times," said Jack Taylor.

"Temperature and humidity are controlled and kept at the correct point to assure that seeds are delivered to our customers in strictly fresh condition. Seeds kept in this way do not deteriorate as is sometimes the case where they are exposed to wide variations in temperature and humidity."

Restaurateur Boosts Air Conditioning--

(Concluded from Page 1, Column 3) the cafeteria trade, but I find it very popular with the public, although it does reduce turnover somewhat.

"The following record shows the growth in volume and seating capacity since 1940:

Year	Space (Sq. Ft.)	Food Sales	Seats
1940	2,160	\$ 16,667	48
1941	2,160	21,691	72
1942	2,160	35,494	72
1943	2,160	61,661	72
1944	3,704	96,919	110
1945	3,704	105,421	110
1946	3,704	111,291	110
1947	6,604	116,789	172
1948	6,604	170,553	172
1949 (6 mos.)	6,604	101,790	206

"It will be noted that I have gone through two construction jobs and one remodeling operation in nine years, and these three extensions were accomplished with closing for only three meals on the whole three jobs.

"Until 1947, I used an air-cooling unit, but that year I installed refrigerated air conditioning, although it was too late for use in 1947. Total cost of the installation including ducts was \$7,923.

"The increase in sales in 1948 was \$53,764 of which \$37,714 came in the months from May through October—the time the air conditioning was in service. This amounts to \$205 increase per day during this time."

Horan then stated the results he experienced in May and June of this year, mentioned above.

"Of course," he cautioned, "the increased capacity has a bearing on increased sales as does the growth

of Texas Christian university, whose campus adjoins our site, but I am convinced the air conditioning is in large measure responsible.

"It is time that moderate or small-sized restaurant operators recognize the fact that if they give comfort to their customers, as well as good food and service, they can increase their business as well as their net returns. This involves first spending money for air conditioning."

Horan related that in coming from Texas to Chicago to attend the short course, he noted how few small places knew about air conditioning at all or used it to advantage.

"It was common," he said, "to go into a restaurant displaying an air conditioning sign and find the place hot and humid. It was more common to find places which had no air conditioning of any kind."

"The operators who had it would say it wasn't hot enough to run the machinery, and the others didn't seem to know it existed or had never thought about using it."

He added that he found only a few places using air conditioning effectively and those which did were filled to capacity.

'Salesmen's Time Control'

CHICAGO—A typical salesman's face-to-face contact with his customers takes only about 2 hours of his normal eight hour day, a book on *Salesmen's Time Control* issued by the Dartnell Corp. here indicates.

The volume is an investigative study of how salesmen in various industries spend their productive time.

KOCH

keeps 'em
COLD...
and CLEAN!

Folks like their bottled goods cold... but customers are repelled by wet, slimy bottles with soaked-off labels. The Zerostream Beverage Cooler keeps beer and soft drinks at just the proper temperature. Doors slide up easily for faster service and instant location of favorite brands.



Model 8218, 18-case model for remote installation. To the left, below, is Model 8330, the Koch self-contained, 30-case model. Either capacity model is available in both styles.

KOCH

refrigerators

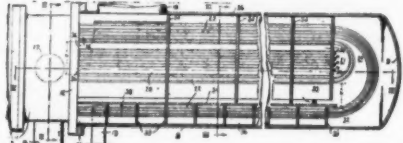
600 East 14th Avenue
North Kansas City 16, Mo.
Since 1883

The KOCH Zerostream features utility, beauty, economy... everything buyers want in a beverage cooler. This new Koch model is available in 18 or 30 case capacities, for either remote or self-contained installation of the condensing unit. Send for complete details on this sensational new beverage cooler and the complete Koch line of profit-making commercial refrigerators. Some territories are still available.

PATENTS

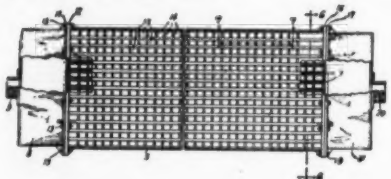
Week of April 19
(Concluded)

2,467,741. HEAT EXCHANGE APPARATUS. Chester F. Hancock, Primus, Pa., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Sept. 30, 1947, Serial No. 776,900. 2 Claims. (Cl. 257-32.)



1. In heat exchange apparatus, a shell having one end open and the other end closed; a box closing the open end of the shell and including a tube plate; hairpin tubes carried by the tube plate; said tubes including first and second pass tube portions joined by vertical bends and including third and fourth pass tube portions joined by horizontal bends so that the latter tube portions may be located vertically in space between the first and second pass tube portions; said box including an inlet and outlet connections and means for causing liquid medium entering the inlet connection to flow in series through the first, second, third and fourth pass tube portions to the outlet connections; said shell including an inlet for condensable medium located at the upper portion thereof adjacent to said box and an outlet for condensate located at the lower portion thereof adjacent to said box; said first pass tube portions including a first group extending along the bottom of the shell and a second group spaced thereabove and arranged below the third and fourth pass tube portions; a horizontal baffle dividing the shell interior into upper condensing and lower cooling spaces which communicate at the closed end of the shell; said tube portions of the first pass being located in the cooling space and such tube portions and the horizontal baffle being spaced below the remaining tube portions of the passes; vertical baffles in the condensing space and arranged to constrain medium entering the inlet and flowing toward the closed end of the shell to pass to and fro across the tube portions therein; vertical baffles in the cooling space and constraining condensate flowing therealong from the closed end of the shell to the outlet to pass to and fro across the tube portions therein; and means providing for discharge of condensate through the shell outlet so as to maintain submergence of tube portions below the horizontal baffle.

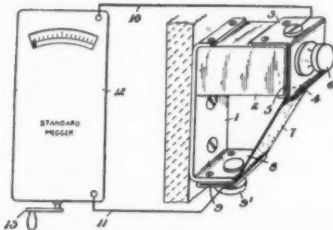
2,467,935. HEAT EXCHANGE SYSTEM. Walter D. Harper, Florence, S. C. Application April 25, 1946, Serial No. 664,903. 1 Claim. (Cl. 257-245.)



In a heat exchange unit, a casing, a series of vertically disposed pairs of plates, a vertically disposed end wall at both ends of each pair of said plates, a plurality of vertically disposed parallel cross-plates between the plates of each of said pairs, said cross-plates being adapted to assure predetermined distance between the plates of each of said pairs, to serve as heat conductor between the fluid flowing through each pair of plates and to provide a plurality of vertically disposed flows in each pair of plates, each of said pairs of plates being close to its adjacent pairs of plates in order to provide a narrow horizontally disposed flow between adjacent pairs of plates, a chamber at each end of the series of plates adapted to enter and exit, respectively, the fluid for the horizontally disposed flow, means for mounting the series of plates in said casing and means for supplying fluids for the vertically and horizontally disposed flow, respectively.

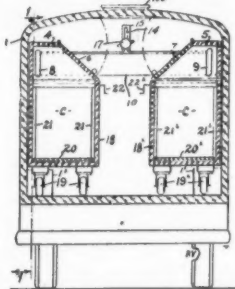
2,466,903. ELECTRICAL HYGROMETER. Archibald Keith Low and Robert S. Segsworth, Toronto, Ont., Can., assignors to The General Engineering Co. (Canada)

Limited, Toronto, Ont., Can. Application April 23, 1944, Serial No. 533,214. 2 Claims. (Cl. 201-57.)



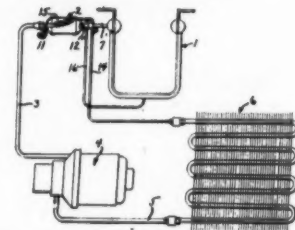
1. An electrical hygrometer resistance unit comprising a bracket to be secured to a supporting surface such as a wall or the like, a pair of contacts electrically insulated one from the other supported by said bracket in relative angular relation, a thin broad strip of electrically non-conducting cellulose material capable of absorbing and releasing moisture with substantially equal readiness extending between said angularly arranged contacts and obliquely of said supporting surface to present a broad expanse to convection currents moving along said supporting surface, and means releasably clamping the ends of said filament to said contacts.

2,466,994. FROZEN FOOD VEHICLE. James W. Martin, St. Petersburg, Fla. Application Jan. 22, 1947, Serial No. 723,502. 9 Claims. (Cl. 62-13.)



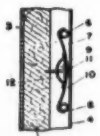
6. A refrigerating system comprising an insulated truck body housing, means forming a heat insulated cabinet in said housing and refrigerating means for maintaining refrigerated atmospheres in said housing and cabinet at different temperatures, said means forming a heat insulated cabinet including a removable heat insulated container.

2,467,078. COMBINATION ACCUMULATOR, METERING TUBE, AND HEAT EXCHANGER FOR REFRIGERATION SYSTEMS. Martin T. Cahenzli, Jr., Chicago, Ill., assignor to The Harry Alter Co., Chicago, Ill., a corporation of Illinois. Application Feb. 11, 1946, Serial No. 646,820. 6 Claims. (Cl. 62-8.)



1. In a combination unit for installation in refrigerating system, a hollow casing, a fitting in one end of said casing for connection to the evaporator outlet of the system, a fitting in the other end of the casing for connection with the suction line of the system, an upwardly inclined pipe in said casing having one end connected to the second said fitting and the other end open near the top of the casing, and a tube for connection in the high pressure side of the system having a pair of legs extending through the casing and a part within the casing intimately associated with said pipe.

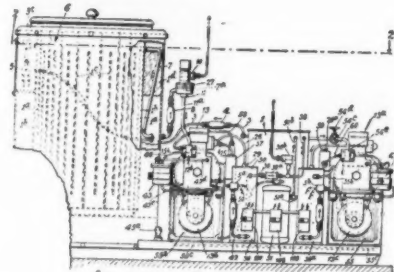
2,467,191. REFRIGERATOR LINER AND EVAPORATOR COIL SECURED TO THE EXTERIOR THEREOF. Thomas Graham Crider, Fayetteville, N. Y., assignor to Carrier Corp., Syracuse, N. Y., a corporation of Delaware. Application Jan. 10, 1946, Serial No. 640,168. 6 Claims. (Cl. 62-89.)



1. In a refrigerator, the combination of an exterior decorative shell, an inner

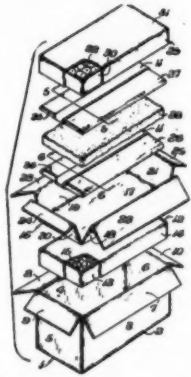
liner forming the wall of a storage compartment, insulation material disposed between the shell and the liner, a coil extending about the exterior wall of the liner adapted to maintain the storage compartment at a desired temperature, ratchet members secured at spaced intervals on the wall of the liner, a plate member adjacent the wall of the liner, said plate member having longitudinally extending recesses at its edges fitting adjacent sections of said coil, said plate member having a body portion connecting its recessed portions, said body portion having openings through which said ratchet members protrude, and cup-shaped members fitting against the body portion of the plate member and engaging the ratchet members and thereby securing the plate member in position adjacent the wall of the liner, said plate member holding adjacent coil sections securely against the wall of the liner.

2,467,219. MULTISTAGE REFRIGERATING APPARATUS. Willard L. Morrison, Lake Forest, Ill. Application Dec. 21, 1942, Serial No. 469,672. 6 Claims. (Cl. 62-3.)



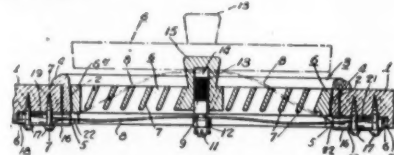
1. A refrigerating apparatus which includes an evaporator through which a refrigerant is passed, said evaporator being in the form of a container surrounding a space adapted to receive material to be treated, a super heat suppressing apparatus including a Venturi tube to which the refrigerant, after passing through the evaporator, is delivered, a heat removing apparatus to which the refrigerant is delivered from the super heat suppressing device and which removes heat therefrom, and means for delivering said refrigerant to the evaporator.

2,467,268. SHIPPING PACKAGE USING DRY ICE. Gustav Merkle, Philadelphia, Pa., assignor, by mesne assignments, to Sherman Paper Products Corp., Newton Upper Falls, Mass., a corporation of Massachusetts. Application Dec. 3, 1943, Serial No. 513,422. 7 Claims. (Cl. 62-1.)



6. A shipping package comprising a plurality of thermal control pads adapted to receive a subliming refrigerant between them, and enclosure surrounding said pads and forming therewith a refrigerant chamber, a carton on each side of said refrigerant chamber and forming refrigerated chambers, and a carton enclosing said cartons first named and means for sealing said package.

2,467,309. GRILLE ASSEMBLY. Edward L. Hart and Charles Melvin Moore, Philadelphia, Pa., assignors, by mesne assignments, to Philco Corp., Philadelphia, Pa., a corporation of Pennsylvania. Application Jan. 8, 1946, Serial No. 639,855. 2 Claims. (Cl. 98-40.)



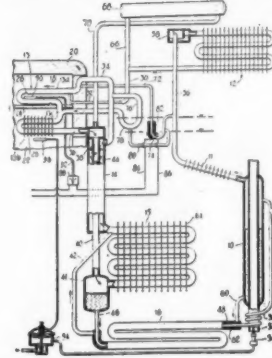
1. In a grille assembly, a structure including a frame of non-circular form, a grille fitted to and seating in the frame and receivable in the latter in a plurality of differing positions, a leaf spring spanning the inner side of the frame and connected to the grille in a manner to permit angular movements of the grille with respect to the spring and to the structure into said differing positions, said spring bearing at its ends against the structure and exerting resilient pressure tending normally to retain the grille against its seat in the frame, and means for anchoring the spring in the structure, said means including a sliding connection between an end of the spring and the structure so as to permit retraction of the grille from the frame.

AVAILABLE FOR LICENSING
OR SALE

Pat. 2,445,470. REFRIGERATING APPARATUS ASSEMBLED AND REMOVED FROM CABINET AS A UNIT. Patented July 20, 1948. This patent shows a refrigerating cabinet of generally conventional construction having a self-contained sealed refrigerating unit, which may be readily installed or removed as a unit without disconnecting any pipes or parts of the unit. A box-like vertical stile containing packed insulating material is secured to the cabinet to house the vertical portions of the pipes connected to the refrigerating unit. The front panel and a side panel of the stile may be removed to permit the pipes to be slid into or removed from the stile. (Owner) Boy-power Inc., 1940 South Main St., Los Angeles 7, Calif. Group 35-84. Reg. No. 19,335.

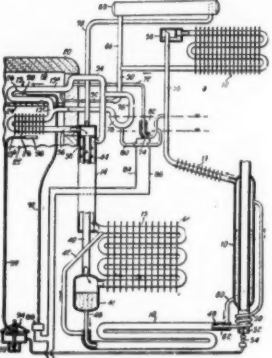
Week of April 26

2,468,104. ABSORPTION REFRIGERATION SYSTEM, INCLUDING DEFROSTING APPARATUS AND METHOD. Benjamin A. Phillips, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Application May 2, 1945, Serial No. 591,609. 20 Claims. (Cl. 62-119.5.)



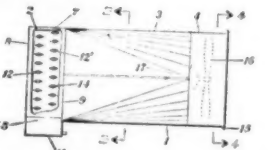
1. An absorption refrigerating system of the unipressure type including a generator, a rectifier, a condenser, an evaporator, an absorber and conduits connecting said elements to form a refrigerant circuit and an inert pressure-equalizing gas circuit, a conduit for bypassing said condenser and for conveying refrigerant vapor from said rectifier into said evaporator, a conduit for bypassing a part of said evaporator and for conveying inert pressure-equalizing gas into a second part of said evaporator, and means for closing each of said by-pass conduits.

2,468,105. ABSORPTION REFRIGERATION SYSTEM, INCLUDING A DEFROSTING ARRANGEMENT AND A CONTROL THEREFOR. Sven W. E. Andersson, Evansville, Ind., assignor to Servel, Inc., New York, N. Y., a corporation of Delaware. Continuation of application Serial No. 591,753, May 3, 1945. This application Nov. 2, 1948, Serial No. 57,876. 16 Claims. (Cl. 62-5.)



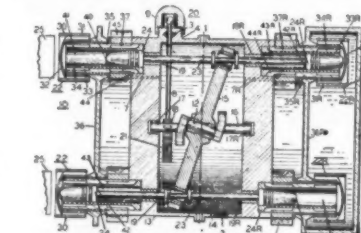
1. A refrigerating apparatus provided with a low temperature evaporator, a high temperature evaporator and means for supplying liquid refrigerant to said evaporators, a first control mechanism for controlling the supply of refrigerant to said evaporators responsive to the temperature of said high temperature evaporator, a second control mechanism for stopping the flow of liquid refrigerant to said low temperature evaporator and for flowing refrigerant vapor thereto while continuing the flow of liquid refrigerant to said high temperature evaporator, a common control knob for adjusting said first control mechanism and for energizing said second control mechanism, and a third control mechanism thermostatically operated responsive to a predetermined high temperature of said low temperature evaporator for deenergizing said second control mechanism.

2,468,292. EVAPORATOR UNIT. William F. Cooley, Oakland, Calif. Application May 30, 1946, Serial No. 670,925. 2 Claims. (Cl. 62-129.)



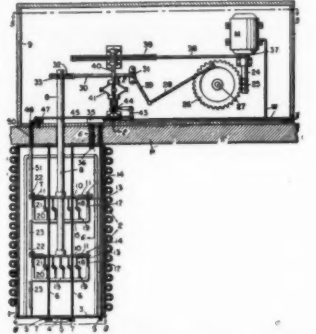
1. An evaporator unit comprising a housing having a rectangular front section with parallel side walls and parallel top and bottom walls, a cylindrical rear section having a diameter equal to the spacing between the top and bottom walls, and a transition section connecting the former sections, the transition section having a cylindrical rear end matching the rear section, a rectangular front end registering with the front section and a body streamlined and shaped to smoothly merge from the cylindrical form at one end into the rectangular form at the other end, an evaporator coil having tubes mounted across the front section, and a fan mounted in the rear section.

2,468,293. REFRIGERATING APPARATUS ACTUATED BY A HOT-GAS ENGINE. Frits Karel du Pré, Eindhoven, Netherlands, assignor to Hartford National Bank and Trust Co., Hartford, Conn., as trustee. Application Jan. 31, 1947, Serial No. 725,431. In the Netherlands Feb. 4, 1946. 10 Claims. (Cl. 62-136.)



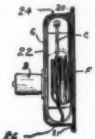
1. A cooling system comprising a hot-gas engine, and a cooling machine driven by the former and operating on the reversed hot-gas engine principle, and common closed-space forming means, both the working space of the hot-gas engine and that of the cooling machine being connected to said common closed space from which the same medium is obtained for both machines.

2,468,444. AGITATOR FOR ELECTRIC REFRIGERATORS. Walter S. Hurley and Elias M. Jones, San Antonio, Tex.



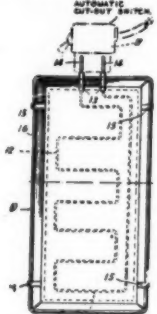
1. The combination in electrically operated agitating mechanism for cream in a tray contained in a freezer which includes a flexible oscillatable agitator, means for reciprocating the agitator, and means for oscillating the agitator, an electric motor and power transmission mechanism therefrom to the agitator, a governor mechanism operated by the motor, lifting means for the agitator controlled by said governor, an electric control for the motor, means carried by said electric control which is adapted to operate the electric control for stopping the motor when the oscillatable agitator engages said means at a predetermined height, and means actuated by the governor when the motor is stopped for elevating the agitator from the tray.

2,468,466. REFRIGERATION COIL FOR CIRCULATED AIR. Arnold A. D. Shanis, Philadelphia, Pa. Application July 1, 1946.



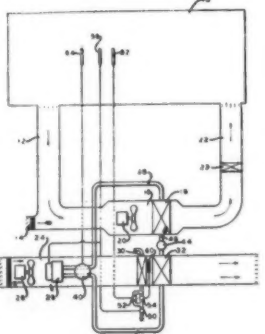
1. In a refrigerator, the combination of an impeller, a helical coil having spaced convolutions of elliptical form, said impeller being mounted adjacent said coil and being adapted to direct warm air from within said refrigerator upon said coil whereby to effect complete vaporization of a liquid refrigerant flowing through said coil, and a metal enclosure for said coil, said enclosure having opposite side walls respectively in frictional engagement with correspondingly opposite sides of said coil, and said coil being internally provided with an extension thereof in the form of a helix having a plurality of substantially circular convolutions.

2,468,492. ICE BLOCK RELEASER. Antoine Gazda, Providence, R. I.



An ice block releaser consisting essentially of a plate of heat transmitting material, said plate being configured to fit snugly within an ice freezing tray on the bottom thereof extending over the entire bottom and being interposed between the material to be frozen and the tray bottom, heat generating means embedded in and contained within said plate and having two ends extending therefrom, insulated leads secured on said ends, said leads extending upwards over the side of said tray and terminating in a terminal prong, said leads being configured to lie in close relationship with the side of the tray and relatively close to one another, and means for operatively integrating said plate and the tray with which it may be associated while allowing dissociation thereof comprising upstanding spring bar members secured at one end thereof to said plate and extending upwardly for lying along the sides of an associated tray, the free ends of said members resiliently engaging the top of such tray.

2,468,626. REFRIGERATING APPARATUS. Charles D. Graham, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio.



1. Apparatus for heating air for an enclosure comprising in combination, a first heat exchange unit, a second heat exchange unit, means for transferring heat from one of said units to the other of said units, means for flowing a first stream of air in thermal exchange with said first heat exchange unit and for discharging said stream of air into said enclosure, means for flowing a second stream of air in thermal exchange with said second heat exchange unit and for discharging said second stream of air into the outside atmosphere, heating means for supplying heat to said second stream of air before said second stream of air flows in thermal exchange with said second heat exchange unit, and means responsive to the requirements for heat in said enclosure for energizing said heating means.

(To Be Continued)

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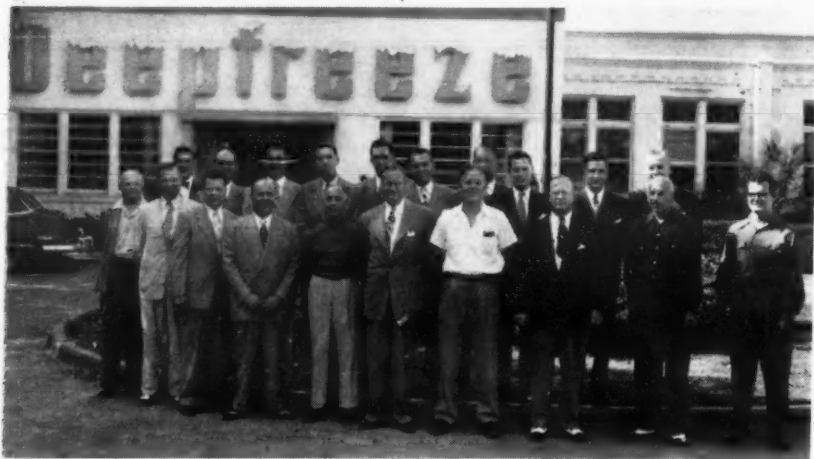
Company.....

Street.....

City..... Zone..... State.....

8-15-49

Just Before the Meeting



Above are officials and sales personnel of the Deepfreeze Div. assembled at the company's plant prior to the sales conference. Front row, left to right: J. Fellmann, central regional sales manager; P. Lowcher, New York district sales manager; J. E. Guertin, sales department; J. T. Hagan, Philadelphia district manager; M. Goodman, export distributor; B. G. Sanderson, manager of field sales; F. F. Duggan, general sales manager; G. H. Smith, vice president and general manager; R. V. Newbell, advertising and sales promotion manager; and W. B. Rives, Chicago district sales manager. Back row, left to right: R. L. Harriman, Jr., advertising department; C. T. Redding, eastern regional sales manager; J. R. Carey, Atlanta district sales manager; J. P. Strange, southern regional sales manager; J. S. Davis, Dallas district sales manager; J. C. Brigrance, Cleveland district sales manager; W. Doland, Seattle district sales manager; W. S. Hall, Kansas district sales manager; R. F. Harnish, western regional sales manager; J. G. Watts, Los Angeles district sales manager.

Deepfreeze Midsummer Sales Conference Hears of Optimistic Outlook from Smith

GENOA CITY, Wis.—At the recently completed mid-summer sales conference held here by the Deepfreeze Div., Motor Products Corp., matters pertaining to sales, advertising, and distribution were discussed, as well as home economics and company policies.

During the latter part of the conference, comprehensive discussions on product service, manufacturing, engineering, and accounting were held. Attending the conference were sales personnel from the home office, and the Atlanta, Chicago, New York City, and San Francisco regional offices, division officials, and officials of the parent company, Motor Products Corp.

F. F. Duggan, general sales manager, presided as chairman of the meeting. G. H. "Rock" Smith, vice president and general manager, key-

noted the conference with a review of the past year's accomplishments and an optimistic outlook for the job to be done in the coming year.

Duggan spoke to the group on subjects relating to sales, including distributor and dealer appointments and development, promotional activities. R. V. Newbell, advertising and sales promotion manager, discussed the company's national and local advertising program and presented new promotional materials and displays.

Ben G. Sanderson, manager of field sales, discussed distributor and dealer objectives, and new sales and promotional activities.

Other speakers included H. W. Whitmore, chief engineer; S. J. Seibert, product service manager; S. Miller, factory manager; S. E. Schaffer, controller; and Rhea V. Shields, director of home economics.

Westinghouse Adds --

(Concluded from Page 1, Column 4) refrigerators at the Westinghouse plant here have been substantially reduced and current production is moving from assembly line direct into freight cars, Ashbaugh reported.

"The extended hot weather throughout the country and the availability of easier credit has been a contributing factor to the public return to a buying mood.

"And an important factor, too, in the public psychology-to-buy is that prices of household refrigerators are about equal to pre-war level. It is safe to assert that there will be no substantial price reduction in household refrigerators."

Chicago Returns to 'Nothing Down' Sales

CHICAGO—"No money down" and "only 25 cents per day" are the magic phrases being used here by appliance dealers and department stores to get customers to buy their major items.

The Fair Store recently offered in newspaper advertising to sell a 7.7-cu. ft. Frigidaire refrigerator with no money down and 24 months to pay. It also offered a Hotpoint automatic washer on the same basis with a \$50 trade-in allowance on the customer's old washer.

Several stores are using the meter plan, whereby the purchaser puts a quarter in the meter daily, with notable success. Goldblatt Bros. department store proffered the same deal, but without the meter.

Hearing on Macy-DuMont Fair Trade Case Today

NEW YORK CITY—A hearing on a motion to restrain the R. H. Macy Co., local department store, from selling DuMont television receiving sets at below manufacturer suggested retail prices was scheduled to be held in Supreme Court here on Monday, Aug. 15.

The store, which had chopped prices about 50% from list on discontinued models of DuMont sets after the manufacturer had disenfranchised it, is already being restrained by court order from delivering sets. It is permitted to take orders for them, however.

The legal battle developed after other DuMont dealers had protested to the manufacturer against "Macy's thrifty prices" on the DuMont line. The store was granted its franchise on July 5 and was disenfranchised on Aug. 5.

The manufacturer, in his plea to the court, said that he disenfranchised the store after it engaged "in practices inimical to the best interests of plaintiff and its other dealers and distributors." Such practices were said to be the advertising and selling of the sets at prices below the suggested list.

Macy's price on the discontinued lines was said to be 30% off list. On the day before the store's franchise was due to expire, it held a sale, reducing these prices another 20%.

In the Aug. 4 "sale" advertisements, Macy's declared that it would continue to handle the DuMont line. Evidence was reportedly procured to

show that the store was getting some of its sets through unauthorized channels and not directly from the manufacturer.

A Macy's spokesman asserted that the store had not broken its contract with the manufacturer and did not violate any agreements. He further asserted that "we are offering and plan to continue to offer DuMont television sets."

After DuMont received its court order temporarily restraining Macy's from offering its sets at cut prices, the store was found to be offering current models at list price.

Richmond Cooling Users--

(Concluded from Page 1, Column 3) of other applicants. By the time the city runs through the backlog to him, the hot-weather season may be over."

Lordley said there will be no charge for the permits, which will be issued from Room 317 in the City Hall. He added that applicants must be prepared to show the number of existing fixtures on the premises, the number of proposed fixtures, the length of run from the property line to main take-off, and the proposed "tons of refrigeration" to be installed.

Frozen Food Distributor Offers Free Dummy Cartons

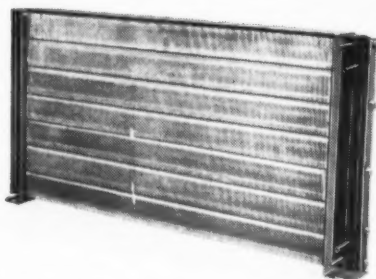
WASHINGTON, D. C.—Southern Dairies, a frozen food distributor, recently offered to provide, without charge and for a limited period, dummy cartons of commercially frozen foods for use by members of the Electric Institute of Washington.

CUT 94% from every \$100 of your Water Bill

THE HEAT-X-CHANGER COMBINATION AIR & WATER COOLED CONDENSER

SAVE 94% OF YOUR ESTIMATED WATER BILLS. GENERALLY PAYS FOR ITSELF WITHIN A YEAR.

The Heat-X-Changer Combination Air and Water Cooled Condenser uses only free air until the air temperature rises above 80°F.



Scientifically designed fins in refrigerant tube transfer heat through many extra square feet of surface. Result: Efficient air cooling. When air temperature reaches 80°F water valve operates. Economically installed. Cleanable water tubes.

WRITE FOR LITERATURE

THE HEAT-X-CHANGER CO., INC.
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2

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